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**Suicide stigma: Improving its understanding,
assessment, and intervention (Breaking the Silence)**

TESIS DOCTORAL

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Pase lo que pase, mantente viva. No mueras antes de estar muerta. No te pierdas a ti misma, no pierdas la esperanza, no pierdas la dirección. Mantente viva, contigo misma, con cada célula de tu cuerpo, con cada fibra de tu piel. Mantente viva, aprende, estudia, piensa, lee, construye, inventa, crea, habla, escribe, sueña, diseña. Mantente viva, mantente viva dentro de ti, mantente viva también fuera, llénate de colores del mundo, llénate con paz, llénate en esperanza. Mantente viva de alegría. Solo hay una cosa que no debes desperdiciar de la vida, y es la vida misma.

— Virginia Woolf

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PREFACE

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<https://doi.org/10.1002/brb3.70125> **(Study 2)**

Pierantonelli, M., Mira, A., Escrivá-Martínez, T., Jiménez-Díaz, A., & Baños, R. M. (2026). Feasibility and qualitative experience of the Breaking the Silence mobile application for reducing suicide stigma, improving knowledge, and enhancing help-seeking intentions. *Under review* **(Study 3)**

Pierantonelli, M., Mira, A., Escrivá-Martínez, T., Diego-Pedro, R., Desdentado, L., & Baños, R. M. (2026). Breaking the Silence: Randomized controlled trial protocol of a mobile application to reduce suicide stigma, improve literacy, and promote help-seeking. *Under review* **(Study 4)**

Pierantonelli, M., Mira, A., & Baños, R.M. (2026). Initial insights from an ongoing randomized controlled trial of the Breaking the Silence mobile application. **(Study 5)**

CHAPTER 1

Introduction

1.1. Suicide: A Public Health Challenge

Suicide constitutes a major global public health concern, marked by its multifactorial nature, complex clinical and social dimensions, and far-reaching personal and societal costs (Al-Halabí & Fonseca-Pedrero., 2024; Turecki & Brent, 2016). Despite sustained international attention, its prevention remains hindered by conceptual ambiguities, limitations in data availability and reliability, and enduring sociocultural barriers that restrict help-seeking and policy implementation (Lovero et al., 2023).

The following sections will address three interrelated dimensions of this challenge: (1) the definition and epidemiological complexity surrounding suicidality, (2) the principal global strategies and public health approaches guiding suicide prevention, and (3) the structural, sociocultural, and individual barriers that continue to limit their effectiveness. Through this progressive analysis, it becomes possible to discern how cross-cutting factors, such as stigma and social inequities, influence each of these dimensions, ultimately shaping the global capacity to prevent suicide.

1.1.1 Definition and Epidemiology

Suicide is considered a multidimensional, multicausal, and transdiagnostic phenomenon—features that make its conceptual delimitation a persistent challenge for the scientific community, as no consensus has yet been reached on its definition (Goodfellow et al., 2018). The World Health Organization (WHO, 2014) defines suicide as “the act of deliberately killing oneself,” and a suicide attempt as any non-fatal suicidal behaviour involving intentional self-inflicted harm, which may or may not involve suicidal intent or result in death. These definitions are used for operational clarity, yet the WHO explicitly acknowledges the ongoing debate around terminology and the limitations of current classifications. One reason for including behaviours without confirmed suicidal intent is the inherent difficulty in determining such intent, which may be obscured by emotional ambivalence or deliberate concealment (Brown

et al., 2005). This complexity is also evident in the WHO's broad use of the term "suicidal behaviour" to refer to a range of actions, including suicidal ideation, planning, attempts, and suicide itself. Collectively, these challenges illustrate the definitional ambiguity that continues to surround the study of suicide.

Despite the absence of a universally accepted definition, suicidality is increasingly conceptualized as a continuum—from ideation to completed suicide—rather than as a set of isolated or unrelated phenomena (Giner et al., 2016). One of the most influential frameworks supporting this view is the nomenclature proposed by Silverman et al. (2007), which categorizes suicide-related phenomena into three major domains: suicidal ideation, suicidal communication, and suicidal behaviour. These domains are primarily distinguished by the presence and degree of suicidal intent, identified as the key criterion for differentiating types of thoughts and behaviours.

Suicidal ideation includes thoughts related to death or suicide, such as the desire to die, mental rehearsals, or the formulation of a plan. Suicidal communication refers to verbal or nonverbal expressions that convey such thoughts or intentions, including threats or messages. Suicidal behaviour involves self-inflicted actions that may result in no injury, injury, or death. Beyond differences in form, these categories are also distinguished by the outcome of the act, allowing for a systematic and clinical framework that highlights the progressive increase in risk and severity across the continuum (Anseán, 2014).

However, the nomenclature proposed by Silverman et al. (2007) remains a matter of debate. The two primary criteria on which it is based—outcome and intent—face significant challenges in practical application. As previously noted, intent is difficult to assess, in part due to the frequent ambivalence observed in individuals at risk—a state that may fluctuate even within a single suicidal episode and complicates both clinical and research evaluations (Teismann et al., 2024). In addition, outcome-based distinctions between suicide and suicide attempt can be misleading, as they may be shaped more by contextual factors than by the underlying intent. Bertolote and Wasserman (2021) have identified two such factors as potentially eroding the

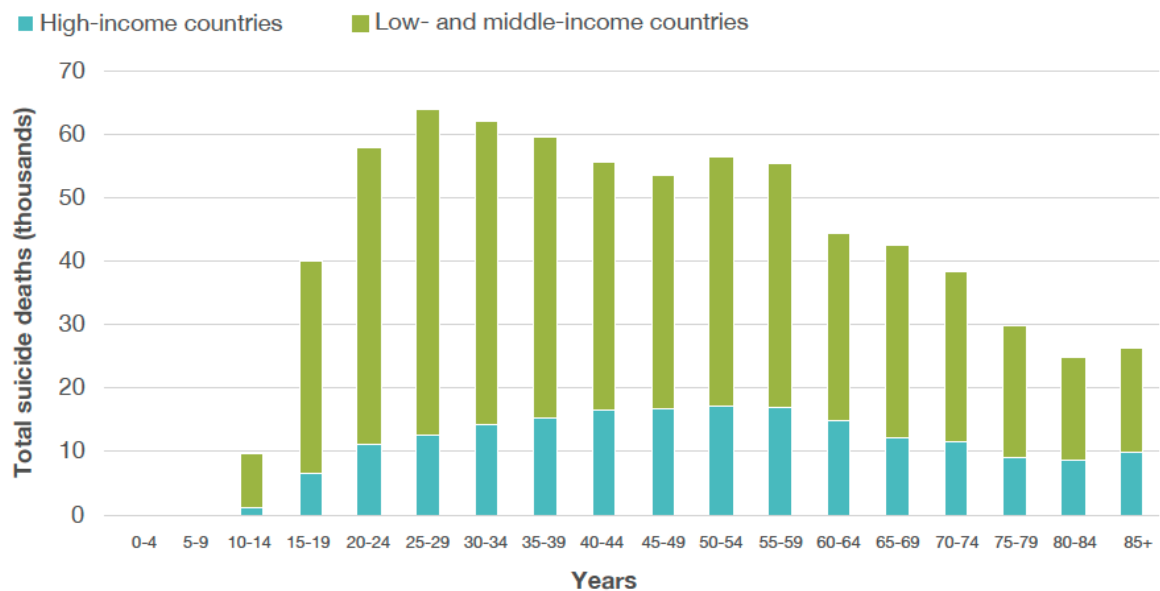
distinction between these categories: the use of more lethal means, which can turn attempts into fatalities, and advances in medical care—particularly in high-income countries (HICs)—which may prevent death despite severe attempts.

Challenges in the definition extend beyond research frameworks, surfacing also in psychiatric classification systems. Although elevated suicide risk is associated with many psychiatric disorders (Xu et al., 2023), the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) lists suicidal behavior as a formal diagnostic criterion only for major depressive episodes and borderline personality disorder (Giner et al., 2016), while references to suicide risk appear in more than 50 other disorders outside the core criteria (Felthous et al., 2023). To address this inconsistency, the DSM-5 introduced *Suicidal Behaviour Disorder* (SBD) in Section III, “Conditions for Further Study,” centred on a recent suicide attempt (American Psychiatric Association [APA], 2013). However, the DSM-5-TR reclassified it under “Other Conditions That May Be a Focus of Clinical Attention” and added specific codes for nonsuicidal self-injury (APA, 2022), citing three main reasons: heterogeneous etiologies; limited value for assessing current suicide risk, as criteria only confirm a past attempt within 24 months; and potential for stigma or discrimination when labelling individuals based on a previous event (Oliogu & Ruocco, 2024).

Despite the lack of a globally standardised definition, the magnitude of the problem is undeniable. Globally, the WHO (2025) estimates that more than 720,000 people die by suicide each year, making it the third leading cause of death among individuals aged 15–29 years. Notably, approximately 75% of these deaths occur in low- and middle-income countries (LMICs). Figure 1 presents the number of suicide deaths by age group and country income level for 2021, underscoring the disproportionate burden borne by LMICs (WHO, 2021a).

Figure 1

Global Suicides by Age Group and Country Income Level (in thousands), 2021



Note. From *Suicide Worldwide in 2021: Global Health Estimates* (p. 7), by World Health Organization, 2025. Licence: CC BY-NC-SA 3.0 IGO.

While disparities by income level are well documented, recent evidence also shows marked differences within the same regions, underscoring that suicide mortality cannot be explained solely by broad regional or income-level classifications (Rotejanaprasert et al., 2025). For example, among European males aged 75 and older, the age-standardised suicide rate is over 45 per 100,000 in Belgium compared with about 31 per 100,000 in Spain, despite both countries sharing comparable economic indicators, healthcare systems within the EU framework, and geographic proximity (Bertuccio et al., 2025).

Such differences between countries and regions may also reflect variations in how deaths are certified and categorised, as well as sociocultural factors such as stigma or the criminalisation of suicidal behaviour (Lew et al., 2022; Snowden & Choi, 2020). In Spain, official mortality statistics from the National Statistics Institute (INE) reported a 4.0% decrease in deaths by suicide in 2024; however, this decline has

prompted questions about potential misclassification of some cases under other categories of external causes (INE, 2025; Fundación Española para la Prevención del Suicidio, 2025), echoing broader debates on underreporting and the reliability of official statistics (Santurtún & Blanco, 2022; González Weiss, 2024).

Nonetheless, mortality figures capture only part of the picture. For every adult who dies by suicide, it is estimated that more than 20 others make one or more attempts, with a global annual prevalence of self-reported suicide attempts of approximately 0.4% (WHO, 2014, 2021a). Lifetime prevalence estimates from cross-national surveys indicate that approximately 9.2% of individuals experience suicidal ideation and 3.1% make suicide plans (Turecki et al., 2019). In Europe, a meta-analysis estimated that approximately 21% of individuals have, at some point in their lives, wished to be dead, while lifetime prevalence of suicidal ideation is around 9% and suicide attempts nearly 3% (Castillejos et al., 2021).

Taken together, available data depict suicide as a major global public health concern, affecting millions of individuals each year. Yet, variations in definitions, reporting systems, and cultural contexts continue to challenge the accuracy and comparability of epidemiological estimates.

1.1.2 Global Strategies and Current Approaches for Suicide Prevention

Given the challenges outlined above, suicide prevention is recognised as a global mental health priority (Gabilondo, 2020) and is explicitly embedded in Target 3.4 of the United Nations' 2030 Sustainable Development Goals (SDGs; United Nations [UN], 2015), which calls for reducing premature mortality from non-communicable diseases by one third. Progress is assessed through the suicide mortality rate—deaths by suicide per 100,000 population—although methodological consensus on this indicator remains limited (da Costa et al., 2022). However, current suicide trends show that only a small proportion of countries are on track to meet this target; projections

from 118 countries estimate that just 3% will do so if current patterns persist (Naghavi et al., 2019).

In order to reach these international goals and maximise suicide prevention efforts, the WHO (2014) recommends a three-tiered model comprising universal, selective, and indicated interventions.

On one hand, *universal strategies* target the entire population, aiming to reduce overall suicide risk and strengthen protective factors regardless of individual vulnerability. Examples include restricting access to means, responsible media reporting, and public education campaigns. These strategies address the social determinants of suicide at a broad level and can have wide-reaching, long-term effects. Substantial evidence supports their effectiveness across different contexts. Community-based multilevel programmes have significantly reduced suicidal behaviour (Farahbakhsh et al., 2022; Ono et al., 2008), school-based educational interventions have decreased suicidal ideation and attempts among young people (Pistone et al., 2019), and suicide prevention media campaigns highlight that multichannel public awareness initiatives can improve knowledge, attitudes, and help-seeking intentions at the population level (Torok et al., 2017).

On the other hand, *selective strategies* address subgroups at higher-than-average risk due to shared characteristics or circumstances, even if they are not currently experiencing suicidal thoughts or behaviours. Examples include LGBTQ populations, individuals with diagnosed depression, or culturally defined high-risk groups. When tailored appropriately, such approaches can be highly effective: digital health interventions for LGBTQ individuals have demonstrated feasibility, acceptability, and preliminary efficacy in reducing suicidal thoughts and promoting help-seeking (Paudel et al., 2024), while collaborative care models for patients with depression have significantly lowered suicidal behaviour, especially when delivered at high intensity with multiple coordinated components (Ko et al., 2025).

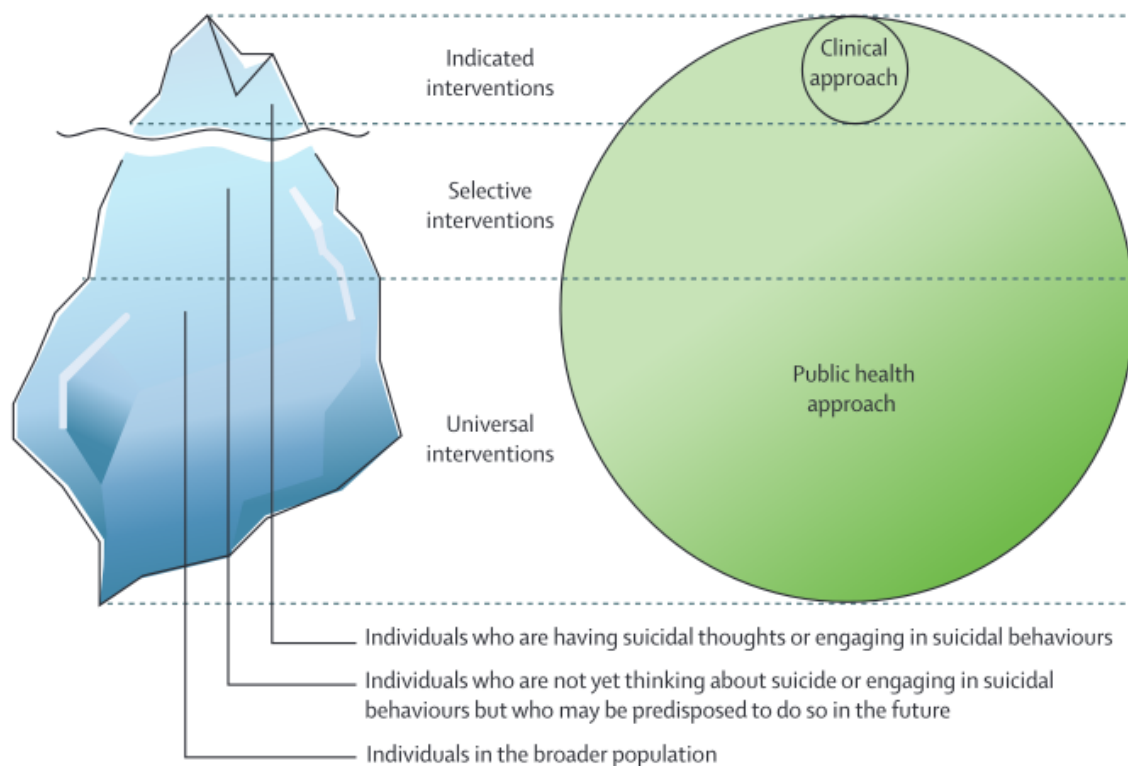
Finally, *indicated strategies* are designed for individuals already showing signs of suicidal ideation or who have engaged in suicidal behaviours, offering clinical and

crisis-oriented responses. For example, peer-support programmes following psychiatric hospitalisation for suicide risk have yielded positive qualitative outcomes in hope and perceived social support (Pfeiffer et al., 2025). Similarly, digital safety planning interventions for patients with recent suicidal ideation or behaviour have proven highly feasible, acceptable, and engaging, with users reporting benefits in coping and crisis management alongside standard clinical care (Barrigón et al., 2022; Porras-Segovia et al., 2024).

This framework aligns closely with a public health perspective that conceptualises suicide prevention as an iceberg, according to Hawton and Pirkis (2024). Above the surface are the relatively few individuals in acute crisis, whose needs are addressed by indicated interventions, representing the clinical response to suicide risk. Beneath the surface lies a much larger proportion of the population who, due to adverse life circumstances or exposure to social determinants such as poverty, violence, or harmful substance use, may be at risk in the future. Universal and selective interventions address this submerged portion, tackling root causes—including structural and policy-level determinants—and reducing the likelihood that individuals will progress to crisis. Figure 2 illustrates this framework. As the authors highlight, the three levels are interdependent and mutually reinforcing, and their integration within a coordinated, multisectoral strategy holds significant potential to reduce suicide rates at the population level. Critically, stigma operates as a cross-cutting barrier across all three levels of this framework: it reduces the reach and uptake of universal campaigns, impedes access to selective programmes among at-risk groups, and discourages disclosure and help-seeking among those most in need of indicated care. Its reduction is therefore not a peripheral concern but a structural prerequisite for the effectiveness of the public health approach to suicide prevention, a point developed in the following section.

Figure 2

The Iceberg Analogy Underpinning the Public Health Approach to Suicide Prevention.



Note. From *Preventing suicide: a call to action* (Fig. 2), by K. Hawton and J. Pirkis, 2024, *The Lancet Public Health*, 9(10), p. e826 ([https://doi.org/10.1016/S2468-2667\(24\)00159-2](https://doi.org/10.1016/S2468-2667(24)00159-2)). Licensed under CC BY-NC 4.0.

Stigma Reduction as a Cross-Cutting Priority

Across universal, selective, and indicated approaches, stigma functions as a pervasive barrier that can undermine uptake, acceptability, and timely help-seeking, thereby constraining the effectiveness of suicide prevention strategies (WHO, 2021c). Indeed, in a global online survey conducted for the Lancet Commission on ending stigma and discrimination in mental health and disseminated through organisations working with people with lived experience (PWLE), 80% of almost 400 respondents from 45 countries and territories agreed that stigma and discrimination can be worse than the impact of the mental health condition itself (Thornicroft et al., 2022). In response, the Commission set out eight actionable recommendations, emphasising

that stigma is sustained not only by social attitudes but also by legal and institutional arrangements. Recommendation 3 specifically calls for legal reform under Objective 3 of WHO's Comprehensive Mental Health Action Plan (WHO, 2021b), including the decriminalisation of suicide, as a means of supporting progress toward the SDG suicide-reduction target described above (Thornicroft et al., 2022, 2024).

Accordingly, reducing stigma can further strengthen the effectiveness of these strategies, reinforcing their interdependence within a comprehensive public health approach (Oexle & Rüsch, 2017). Initiatives that address misinformation and misconceptions about suicide are critical, as individuals with lower awareness of risk factors, available treatments, and warning signs may be less likely to seek professional help (Žilinskas & Lesinskienė, 2023). Furthermore, evidence from community-based programmes and responsible media coverage shows that anti-stigma efforts can reduce suicidal ideation and behaviour, especially among vulnerable populations (Niederkrotenthaler et al., 2022; Gilissen et al., 2021).

Consistent with this global emphasis on integrating stigma reduction into suicide prevention, Spain recently adopted its first National Suicide Prevention Plan (Ministerio de Sanidad, 2025). Structured around six strategic lines, the plan combines nationwide awareness campaigns to combat stigma and promote help-seeking, targeted measures for high-risk groups, the integration of preventive actions across health, education, and social sectors, and the reinforcement of crisis care and follow-up services. Stigma reduction is embedded throughout these lines, explicitly linked to early detection, greater acceptability of seeking help, and the creation of supportive social environments—aligning Spain's national approach with the WHO-recommended framework.

1.1.3 Obstacles to Effective Suicide Prevention

Despite the availability of evidence-based frameworks and a growing global commitment to suicide prevention, multiple barriers continue to undermine the effectiveness, scalability, and sustainability of preventive efforts, resulting in uneven implementation across countries (Wasserman, 2021). By 2018, only 38 nations had

reported the adoption of a national suicide prevention plan, a figure that remained unchanged in the most recent assessment (WHO, 2018, 2021a). Such obstacles manifest at structural, sociocultural, and individual levels.

At the structural level, persistent inequalities in the implementation and sustainability of suicide prevention plans are closely tied to disparities in mental health funding between HICs and LMICs (GBD 2021 Suicide Collaborators, 2025). As a result, preventive strategies and research remain disproportionately concentrated in wealthier nations, limiting the transferability of evidence to more diverse settings (Platt et al., 2019). In addition, the absence of reliable surveillance systems severely restricts the ability to monitor trends and evaluate interventions (Vijayakumar & Phillips, 2016). Moreover, widespread underreporting and misclassification of suicides—largely due to institutional weaknesses—produce inaccurate estimates of the true burden of suicide and hinder meaningful international comparability (Bertuccio et al., 2025; Oquendo & Porras-Segovia, 2020).

Sociocultural barriers also play a decisive role. Recently, Pirkis et al. (2023) argued that national strategies remain too focused on clinical responses and neglect broader social determinants, such as cultural values, discrimination, and social exclusion, while limited intersectoral collaboration further weakens their impact. Stigma and taboos surrounding mental health and suicide, therefore, represent a particularly powerful barrier: they not only constrain political and social engagement (WHO, 2021a) but also discourage individual help-seeking (O'Connor et al., 2023; Reynders et al., 2014). For instance, in some contexts, the criminalization of suicidal behaviour reinforces exclusion and discourages individuals in crisis from contacting health or emergency services (Lovero et al., 2023). Public health campaigns that lack cultural sensitivity may likewise be perceived as irrelevant or intrusive, thereby reducing their effectiveness (Naghavi et al., 2019). As previously noted, the destigmatization of suicide is essential both for strengthening the accuracy of epidemiological data and for enabling the design of contextually relevant prevention strategies (Lew et al., 2022; Silverman, 2016).

Finally, at the individual level, a range of personal and situational factors can impede engagement with preventive services. Limited awareness of available resources and low suicide literacy can hinder timely support (Calear et al., 2014; Mann et al., 2021; Zalsman et al., 2016), while many individuals also delay help-seeking in the hope that the problem will subside on its own (Bruffaerts et al., 2011). Perceived or actual barriers—such as geographical distance, financial costs, or limited-service availability—further restrict access (Czyz et al., 2013; Han et al., 2018a). In addition, negative prior experiences may foster mistrust in healthcare systems, reducing the likelihood of future help-seeking (Podlogar et al., 2022; Shin et al., 2025). For those experiencing suicidal ideation, ambivalence about living, coupled with fears of involuntary treatment or social repercussions, can become powerful deterrents to disclosure and engagement with care (Batterham et al., 2022; Calear & Batterham, 2019). Feelings of shame and fear of rejection may further intensify this reluctance, often leading to social withdrawal and isolation (Fulginiti & Frey, 2018; Groh et al., 2018; Skogstad et al., 2005).

In sum, overcoming these structural, sociocultural, and individual barriers is essential for suicide prevention strategies to reach their full potential. As O'Connor and Portzky (2018) emphasise, progress in the field depends not only on the development of evidence-based interventions but also on addressing the persistent challenges of stigma, inadequate data, and uneven implementation. Recognising and tackling these obstacles remains a prerequisite for advancing towards more effective and equitable global suicide prevention.

1.2. Stigma in the Context of Suicide

Stigma represents a central yet often overlooked dimension in the understanding of suicidal behaviour. Beyond its historical roots in moral, religious, and legal condemnation, stigma continues to shape how society perceives, discusses, and responds to suicide. Its effects extend from public attitudes and institutional practices to individual self-perceptions and social interactions, ultimately influencing help-seeking, recovery, and prevention efforts.

The following sections will examine this phenomenon through three key dimensions: (1) the conceptual foundations of stigma, grounded in classic and contemporary frameworks that explain its cognitive, affective, and behavioural components; (2) the principal forms of stigma as they manifest in the context of suicide—namely, public, self-, structural, and associative stigma—highlighting their interplay and psychosocial consequences; and (3) the distinctive characteristics that differentiate suicide stigma from that associated with other mental health conditions, emphasizing the need for tailored conceptual and intervention approaches. Together, these perspectives provide an integrative foundation for understanding how stigma operates as both a social and psychological barrier within suicide prevention.

1.2.1 Conceptual Framework of Stigma

“Stigma refers to a behaviour of exclusion and discrimination that has played a role in our evolution as a species and is present in all cultures. This discrimination is carried out based on a mark or label related to a personal or social characteristic that devalues the person who bears it [...] One of the labels with the greatest stigmatizing load in different human cultures is that of madness; in other words, the one associated with mental health disorders and problems” (Muñoz López, 2025, pp. 29–30, [own translation]).

Social-psychological accounts have conceptualized stigma as a tripartite process involving stereotypes, prejudice, and discrimination (Corrigan et al., 2005; Corrigan & Watson, 2002a; Ottati et al., 2005; Thornicroft et al., 2007). Stereotypes represent the cognitive component of stigma and are described as schemas about social groups (Dovidio et al., 2010; Stangor, 2016). Although they may function as heuristics for processing information, stereotypes are not based on facts, vary across cultures, and evolve over time (Angermeyer et al., 2014; Pescosolido et al., 2008, 2013). In mental health, common stereotypes include *dangerousness* (e.g., “people with mental illness are violent”), *incompetence* (e.g., “people with mental illness cannot work or live independently”), and *permanence* (e.g., “people with mental illness will

never recover”) (Sheehan et al., 2017a). Thornicroft et al. (2022) reframed this component as *misinformation*, emphasizing that stereotypes reflect a lack of accurate knowledge about mental health. This perspective highlights the importance of mental health literacy, since improving knowledge is central to reducing stigmatizing beliefs (Jorm, 2000; Morgan et al., 2018).

Awareness of stereotypes does not necessarily imply agreement with them; prejudice arises when these stereotypes are endorsed as valid and generate negative reactions toward the stigmatized group (Sheehan et al., 2017a). In the context of mental health, such reactions often take the form of fear, pity, or anger (Fox et al., 2018). Thornicroft et al. (2022) conceptualize this component as attitudes, a broader construct that encompasses both affective dispositions and evaluative judgments, thereby extending the classical notion of prejudice beyond emotions alone. Following these attitudinal reactions, discrimination emerges as the behavioural manifestation of stigma, defined as the unfair or unjust treatment of individuals based on their devalued identity (Brewer, 2007). In the field of mental health, such actions may include avoidance, segregation, or coercive practices, which further marginalize those affected (Corrigan & Watson, 2002a; Pescosolido & Martin, 2015). By linking stereotypes and prejudice with observable outcomes, discrimination produces tangible barriers to employment, housing, relationships, and health care.

Research has also highlighted more subtle forms of discrimination, often referred to as microaggressions or interactional discrimination (Link & Phelan, 2014; Sue et al., 2007). These occur in everyday social encounters and do not usually involve overt rejection, but rather manifest through attitudes of uneasiness, discomfort, superiority, or even excessive kindness toward the stigmatized person, ultimately reinforcing their exclusion and lower social status. Empirical studies have documented concrete examples of such behaviours, including infantilizing or overly patronizing communication, minimizing or invalidating individuals’ experiences, attributing ordinary behaviours to symptoms of mental illness, or deliberately avoiding physical proximity (Barber et al., 2019; Zoubaa et al., 2022).

This understanding of discrimination also resonates with the influential conceptualization of stigma proposed by Link and Phelan (2003). According to their framework, stigmatization unfolds through the convergence of labelling, stereotyping, separation, status loss, and discrimination, all of which are sustained by social power. Within this perspective, interactional discrimination can be seen as one of the everyday mechanisms through which status loss and exclusion are enacted in subtle but consequential ways.

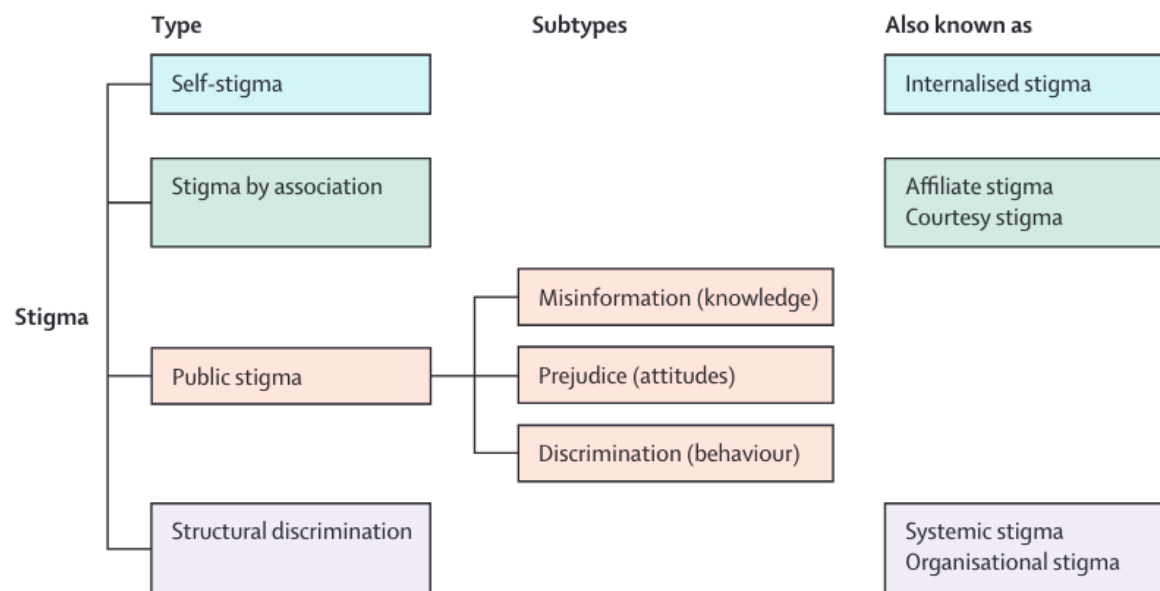
Although these frameworks were originally developed in the field of mental problems, their core components are highly relevant to the understanding of suicide stigma. Indeed, suicide has historically been associated with moral, religious, and legal condemnation, which reinforces processes of labelling, stereotyping, and exclusion (Adamiak & Dohnalik, 2023; Yampolsky & Kushner, 2020). Building on this conceptual foundation, the following section explores how these mechanisms manifest across different types of stigma, specifically in the context of suicide.

1.2.2 Types of Stigma and Their Consequences in the Context of Suicide

Building on this framework, the following section introduces the main forms of stigma most relevant to suicide: (1) public stigma, (2) self-stigma, (3) structural stigma, and (4) stigma by association. Figure 3 summarizes these categories along with their subtypes and commonly used alternative terms.

Figure 3

Overview of Stigma Types



Note. From *The Lancet Commission on ending stigma and discrimination in mental health* (p. 1442), by G. Thornicroft *et al.*, 2022, *The Lancet*, 400(10361), p 1442 ([https://doi.org/10.1016/S0140-6736\(22\)01470-2](https://doi.org/10.1016/S0140-6736(22)01470-2)). Copyright 2022 by Elsevier.

Public Stigma

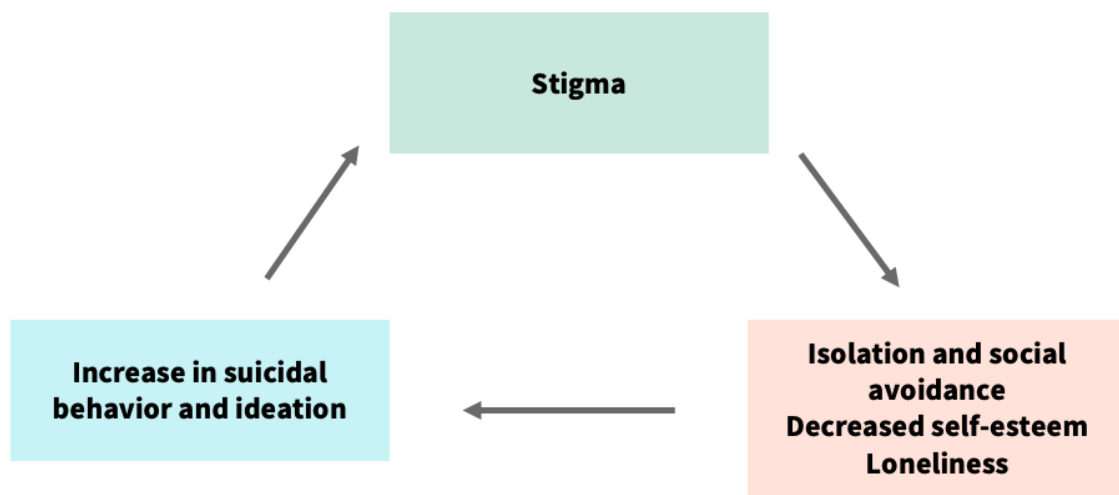
Public stigma toward suicide refers to society's negative attitudes and beliefs about individuals who experience suicidal thoughts or behaviours. While its exact impact on suicidal processes remains unclear, research on suicide stigma has grown considerably in recent years (Batterham *et al.*, 2013a, 2022).

Evidence indicates that suicide stigma often unfolds in a cyclical pattern (Carpiniello & Pinna, 2017; Demmer, 2015). Stigmatizing attitudes foster social withdrawal and avoidance (Schomerus *et al.*, 2015), lower self-esteem, and intensify loneliness (Corrigan & Bink, 2016; Thornicroft *et al.*, 2022), all of which are recognized risk factors for suicidal behaviour (Van Orden *et al.*, 2010) (see Figure 4). Demmer (2015) highlights this as a feedback loop, where suicidal thoughts and behaviours trigger further stigmatization, thereby reinforcing vulnerability and perpetuating the

cycle. The internalization of these experiences—addressed in the following section on self-stigma—plays a central role in sustaining this cycle.

Figure 4

Cycle of Suicide Stigma



Note. Adapted from *A phenomenological investigation of suicide stigma* (p. 64), by A. L. Demmer, 2015, Master's thesis, Wilfrid Laurier University. Copyright 2015 by Amanda L. Demmer.

Research consistently shows that people experiencing suicidal ideation or attempts are often subject to negative stereotypes, including attributions of selfishness, weakness, and poor coping abilities. Such perceptions have been documented in both narrative reviews and population-based surveys, underscoring their persistence across various contexts (Carpiniello & Pinna, 2017; Ludwig et al., 2020a).

Such stereotypes, however, do not arise in isolation. Another critical driver of public stigma is misinformation. Literacy is defined as the knowledge and beliefs that enable individuals to recognize, manage, or prevent a health condition (Jorm, 2000).

Lower levels of literacy are consistently associated with greater stigma (Batterham et al., 2013a; Gearing et al., 2022; Ludwig et al., 2021; Jahan et al., 2023; Nakamura et al., 2021; Al-Shannaq & Aldalaykeh, 2021). Evidence further links low literacy to older age, male gender, lower education, and limited exposure to suicide, although these associations vary across cultural and socioeconomic contexts (Money & Batterham, 2019). For example, An et al. (2024) showed in South Korea that literacy reduced stigma only among individuals with low expressive suppression, highlighting that its protective effect depends on broader sociocultural norms.

Importantly, enhancing suicide literacy has been shown not only to reduce stigmatizing attitudes but also to foster more favourable orientations toward professional help-seeking, rather than self-reliance or inaction (Calear et al., 2014; Cruwys et al., 2018; Žilinskas & Lesinskienė, 2023).

The Role of Non-Stigmatising Language

Language is not a neutral medium: through routine verbal processes of categorisation, association, and evaluation, it assigns meaning and social value to people, behaviours, and ideas, thereby shaping collective attitudes (Hayes et al., 2001). Accordingly, adopting non-stigmatising language is essential, as poorly chosen terms can reinforce stigma and contribute to the cumulative burden experienced by PWLE. In line with this view, The Lancet Commission on ending stigma and discrimination in mental health recommends using person-first rather than identity-first language, emphasising the individual as a person rather than defining them by a condition or experience (Thornicroft et al., 2022).

In Spain, concerns about the language used to discuss suicide have been echoed across multiple sectors, including prevention-oriented associations (e.g., López Vega, 2019; Martínez Vallier, 2025), public and professional bodies (e.g., Consejo General de la Psicología de España, 2024), and the development of media guidelines for responsible reporting (e.g., Ministerio de Sanidad, 2020). In keeping with these aims, Spanish guidance on suicide communication commonly recommends avoiding phrasing that can imply blame, criminality, or evaluative judgment. For example, it

often prefers “die by suicide” over the reflexive verb form *suicidarse*, as the latter may place undue responsibility on the person, whereas the former shifts the focus to the death as an outcome and frames it more readily as a social and public-health phenomenon. Similarly, formulations equivalent to “commit suicide” are discouraged because they borrow the language of criminality. Finally, expressions equivalent to “successful” or “failed” suicide are avoided, as they frame suicidal behaviour in terms of success and failure, implicitly valuing death as an achievement and non-fatal outcomes as failure, thereby risking additional shame and stigma.

Self-stigma

Among the various explanatory models of self-stigma, the socio-cognitive framework has received the strongest empirical support (Fernández et al., 2023). According to this model, self-stigma arises when individuals accept and internalize society’s pejorative conceptions about themselves (Corrigan & Watson, 2002b, 2002b). In the context of suicide, such internalization has been shown to undermine self-esteem and self-efficacy significantly (Carpiniello & Pinna, 2017) and to increase psychological distress (Scocco et al., 2016). Thus, self-stigma not only reflects the personal toll of public stigma but also represents a pivotal stage in the cycle through which external disapproval becomes self-directed devaluation.

A particularly detrimental consequence of self-stigma is its role in discouraging help-seeking behaviours (Ammerman et al., 2022; Hom et al., 2015; Wyllie et al., 2025). Feelings of shame and fear of rejection often lead individuals with suicidal ideation to remain silent about their thoughts (Fulginiti & Frey, 2018), thereby intensifying social isolation and straining interpersonal relationships (Hanschmidt et al., 2016). Consistent with this, Sheehan et al. (2019) found that suicide attempt survivors frequently perceive disclosure as ambivalent: while openness can foster social support and recovery, it also carries risks such as stigma, unsupportive reactions, or unwanted interventions. Such concealment may elevate suicide risk, particularly among those with a history of mental health difficulties (Oexle et al., 2018). Further

qualitative evidence suggests that attempt survivors often internalize stigmatizing beliefs, describing themselves as weak or burdensome, and may engage in label avoidance by concealing their suicidal experiences (Sheehan et al., 2017a).

Taken together, these findings illustrate how the internalization of stigma fosters not only secrecy and withdrawal but also a sense of futility regarding the possibility of seeking support. Corrigan et al. (2015) conceptualized this mechanism as the “*why try*” effect, whereby self-stigma diminishes self-respect and erodes motivation to pursue adaptive behaviours such as disclosure or professional help-seeking. Recent evidence confirms the relevance of this model among suicide attempt survivors, linking higher self-stigma to greater depression and stigma-related stress, and to lower self-esteem, empowerment, and recovery (Sheehan et al., 2020).

Overall, this body of evidence underscores the multifaceted impact of self-stigma: it undermines psychological resources, obstructs access to support, and perpetuates vulnerability. In this regard, stigma has long been recognized not only as a barrier to treatment but also as a potential independent risk factor for suicide itself (Pompili et al., 2003; Reynders et al., 2014).

Structural Stigma

Structural stigma refers to laws, policies, and institutional norms that restrict opportunities for stigmatized groups, either by design or through ostensibly neutral practices with harmful effects. It includes legislation, organizational routines, funding systems, and sector-wide norms in health care, media, and legal contexts; when based on labels rather than actual incapacity, these practices constitute structural discrimination (Corrigan et al., 2004; Corrigan & Bink, 2016).

In suicide prevention, policies are often guided by moral, political, and economic logics that emphasize individual responsibility, risk management, and cost-effectiveness, frequently at the expense of equity and structural reform (Fitzpatrick,

2022). However, research on risk factors in settings with high structural stigma remains limited, highlighting the need for further study (Guzmán et al., 2019).

Despite the central role of health services, institutional responses have historically been limited, with insufficient prioritization, underfunded programs, and a lack of standardized protocols (Mann et al., 2021; WHO, 2014). This is reflected in professionals' limited knowledge, stigmatizing attitudes, and training gaps, with many reporting little or no formal preparation (Clement et al., 2015; Wakai et al., 2020). Negative or moralistic views toward suicidal patients have been documented across disciplines and may hinder detection, intervention, and recovery (Carpiniello & Pinna, 2017; Boukouvalas et al., 2020). Importantly, a substantial proportion of those who die by suicide have prior contact with health services, underscoring that stigma in this context is not merely a matter of individual prejudice but reinforced by institutional norms and organizational practices (Luoma et al., 2002; Ahmedani et al., 2019; DelPozo-Banos et al., 2024).

Legal frameworks represent another dimension of structural stigma. Despite global trends toward decriminalization, attempted suicide remains punishable in over twenty countries, often as a legacy of colonial law or religious codes (Mishara & Weisstub, 2016; Ochuku et al., 2022). Criminalization does not deter suicidal behaviour; rather, it discourages disclosure, fosters underreporting, and may even be associated with higher suicide rates (Wu et al., 2022). By framing suicidality as a criminal offense, these laws institutionalize stigma, reinforcing narratives of blame and moral failure while obstructing help-seeking and the adoption of effective prevention strategies (Lew et al., 2022).

In turn, the media function as a key social institution shaping cultural meanings of suicide. Harmful reporting, particularly of celebrity suicides, has been linked to increased deaths, whereas coverage emphasizing coping and recovery—the Papageno effect—can be protective (Niederkrötenhaller et al., 2014, 2020; Sinyor et al., 2018). Adherence to international guidelines remains essential (WHO, 2014, 2017),

and well-designed media campaigns within broader strategies can enhance literacy, improve attitudes, and promote help-seeking (Torok et al., 2017).

Taken as a whole, these findings highlight that structural stigma in suicide remains underexplored, yet its manifestations across health care, law, and media carry profound consequences for prevention and recovery.

Stigma by association

Stigma by association refers to prejudice and discrimination directed at individuals because of their connection with a stigmatized person rather than their own attributes. It often manifests through blame, shame, and perceptions of contamination, shaping how families and close others are treated (Corrigan & Miller, 2004). In the context of suicide, this stigma particularly affects relatives of those with suicidal ideation or attempts, with research largely focused on suicide bereavement (Evans & Abrahamson, 2020; Goulah-Pabst, 2021).

The term “survivor of suicide loss” (or “suicide survivor”) is commonly used to describe those deeply affected by a suicide death, though terminology remains inconsistent and debated (Andriessen, 2009; Andriessen et al., 2017). More recently, scholars have proposed a continuum of survivorship, underscoring that the impact of suicide ranges from minimal exposure to profound disruption and prolonged grief (Cerel et al., 2014). Each death may expose up to 135 individuals and deeply affect around 60, highlighting the broad population potentially vulnerable to stigma by association (Cerel et al., 2019; Berman, 2011).

Suicide-bereaved individuals often face social judgments, such as blame for missing warning signs or failing to intervene (Cvinar, 2005; Sheehan et al., 2018). The absence of non-judgmental support is frequently reported as a major challenge, particularly in the first two years, compounded by limited access to practical assistance and reliable information (McGill et al., 2022). These difficulties may arise even earlier, as stigma has also been identified as a major barrier to help-seeking in

the immediate aftermath of loss, particularly within the first 72 hours (Duval et al., 2023). Consistent with these findings, a recent scoping review showed that suicide-related stigma among the bereaved is linked to shame, guilt, secrecy, social withdrawal, depression, and increased suicidality (Wyllie et al., 2025).

Bereavement after suicide is further marked by the search for explanations (Grad, 2011; Andriessen et al., 2017), persistent guilt (Shields et al., 2017; Testoni et al., 2019), anger (Tal Young et al., 2012), and experiences of rejection (Sveen & Walby, 2008; Peters et al., 2016). Parents, in particular, often feel silenced by social environments that discourage open expression of grief (Maple et al., 2010). Qualitative studies describe ambivalent social reactions: some show compassion, while others respond with avoidance, gossip, or intrusive curiosity, reinforcing isolation (Marek & Oexle, 2024). Many bereaved individuals consequently withdraw, limiting access to supportive networks that could ease grief (Goulah-Pabst, 2021; Mathieu et al., 2022). Perceived stigma—awareness of negative societal attitudes toward suicide and those affected—also promotes secrecy about the cause of death, intensifying grief, suicidality, and hindering growth (Oexle et al., 2020). By contrast, disclosure, though fraught with fear of judgment, can support authentic grieving, mobilize social resources, and challenge stigma (Oexle et al., 2022a).

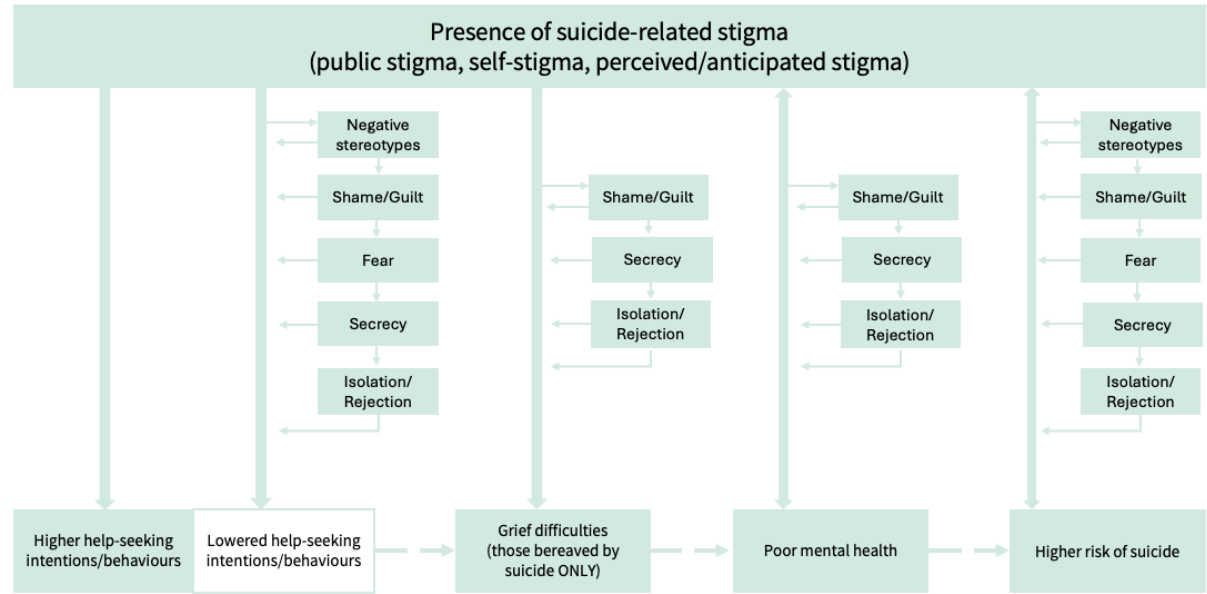
Despite growing recognition of these challenges, suicide bereavement research remains dominated by descriptive accounts, with stigma by association still underexplored in empirical work (Maple et al., 2018). Moreover, suicide bereavement entails unique differences compared to other forms of loss, warranting distinct scholarly and clinical attention—a point that will be further developed in the following section.

Taken together, the preceding forms of suicide stigma converge in their implications for outcomes central to suicide prevention. A recent scoping review by Wyllie et al. (2025), synthesising 100 studies published in recent decades, found heterogeneous evidence but most commonly linked suicide stigma to reduced help-seeking, grief-related difficulties among people bereaved by suicide, poorer mental

health, and higher suicide risk. Their integrative pathway model summarises these associations and highlights potential mechanisms such as shame and guilt, secrecy, and social isolation/rejection (see Figure 5).

Figure 5

Summary Model of Reported Associations Between Suicide Stigma and Key Outcomes.



Note. Adapted from *Suicide-related stigma and its relationship with help-seeking, mental health, suicidality and grief: scoping review* (Fig. 2), by Wyllie et al., 2025, *BJPsych Open*, 11, e60. (<https://doi.org/10.1192/bjo.2024.857>). Licensed under CC BY 4.0.

1.2.3 Specific Features and Distinctions of Suicide Stigma

The study of suicide stigma displays features that set it apart from stigma associated with other mental health conditions. While individuals with some mental disorders are at increased risk of suicidal behaviour (Too et al., 2019), not all people who attempt or die by suicide meet criteria for a diagnosable psychiatric disorder (Arsenault-Lapierre et al., 2004).

Suicidal behaviour elicits prejudices that extend beyond those commonly linked to mental conditions more broadly. For instance, Sheehan and colleagues (2017a), drawing on interviews with suicide attempt survivors, bereaved relatives, and specialized therapists, documented that participants encountered both general stereotypes typically attached to mental illness—such as incompetence, dangerousness, or emotional weakness—and suicide-specific forms of stigma, including perceptions of selfishness, impulsivity, immorality, and attention-seeking. Comparable findings emerged among medical students, who rated suicide as more stigmatized than depression and breast cancer, perceived it as relatively uncontrollable, and associated it with the lowest willingness to disclose (Cryer et al., 2020).

Another important distinction lies in perceptions of recovery. Symptoms related to other mental health conditions are often viewed as manageable or even curable, which may reduce the stigma they generate (Rogante et al., 2022). By contrast, suicidal behaviour can become a defining element of a person's life history, sometimes leaving visible marks or scars that reinforce discrediting views. Consistently, adults from the general population judged recovery to be more likely for individuals with depression without suicidal ideation than for those with a history of suicide attempts (Sheehan et al., 2017b).

Stigma by association takes on particular forms in the context of bereavement. Families of people with mental health problems and those bereaved by suicide may both experience social withdrawal and avoidance (Kölves et al., 2019; Sawitzki et al., 2025). Yet, suicide is often judged as the most extreme manifestation of mental illness, exposing relatives to harsher stereotypes of blame, dysfunction, and unreliability (Sheehan et al., 2017b; Corrigan et al., 2018). Quantitative evidence further shows that suicide-bereaved individuals report significantly higher levels of perceived stigma, guilt, and shame compared to those grieving natural or other sudden deaths, with shame likely reflecting internalized stigma that undermines self-worth (Pitman et al., 2016). Qualitative accounts reinforce these findings, depicting suicide as a “different death” that, unlike deaths from cancer or collective tragedies such as terrorist attacks,

is more often silenced or socially avoided, leaving the bereaved with disenfranchised grief and limited public acknowledgment (Chapple et al., 2015). These social and psychological burdens also extend into the physical domain. A systematic review comparing suicide bereavement with bereavement by natural, accidental, or violent deaths found that suicide-bereaved relatives face increased risks of adverse health outcomes—including cardiovascular disease, hypertension, diabetes, and poorer general health (Spillane et al., 2017).

Recognizing these distinct dimensions of suicide stigma is critical, as these differences underscore the need for tailored interventions that address the unique challenges faced by each population.

1.3. Assessing Suicide Stigma

The systematic assessment of suicide stigma represents a critical step toward understanding its mechanisms, prevalence, and impact across contexts. Despite the growing availability of psychometric instruments, research continues to face challenges related to conceptual clarity, methodological rigor, and cultural generalisability.

The following sections address two complementary dimensions of this issue: (1) the main strengths and limitations of existing instruments used to evaluate suicide stigma and literacy, and (2) the methodological and cultural considerations that shape their validity and applicability across diverse populations. Together, these discussions underscore the progress made in measuring suicide stigma and the persisting need for culturally sensitive and theoretically grounded instruments.

1.3.1 Strengths and Limitations of Existing Instruments

The use of instruments to assess suicide stigma has expanded considerably in recent years. A scoping review documented a marked increase in related publications since 2011, with a sharp acceleration from 2019 onwards (Nicholas et al., 2023). The

review identified 23 instruments explicitly designed to measure suicide-related stigma, most of which focus on public stigma, whereas fewer address self-stigma or perceived stigma. Among the most frequently employed measures are the Suicide Opinion Questionnaire (SOQ; Domino et al., 1980), the Stigma of Suicide Scale (SOSS; Batterham et al., 2013b), and the Grief Experience Questionnaire (GEQ; Barrett & Scott, 1989). Each presents distinct strengths and weaknesses. For example, the GEQ, which includes a subscale on stigmatisation of suicide bereavement, has been used across several languages and populations with robust and consistent psychometric properties (Bailey et al., 2000). In contrast, although the SOQ captures key attitudinal components toward suicide, it was not originally developed as a stigma measure, and its factor structure and internal consistency have been questioned (Anderson et al., 2008).

The SOSS, by comparison, was specifically developed to assess public stigma toward individuals who died by suicide. It comprises three subscales (stigma, isolation/depression, and glorification/normalization) and is available in both long and short forms, allowing for flexible use across settings. Psychometric evaluations consistently report strong internal reliability and factor stability across diverse cultural contexts, with validations conducted in languages including Arabic, Chinese, German, and Spanish (Aldalaykeh et al., 2020; Han et al., 2017a; Ludwig et al., 2020b; Collado et al., 2023). Importantly, the SOSS has also demonstrated sensitivity to change in intervention studies, making it one of the few instruments able to capture reductions in suicide stigma over time (Perceval et al., 2020).

As previously noted, higher levels of suicide literacy are consistently associated with lower suicide stigma (Batterham et al., 2013a; Ludwig et al., 2021; Jahan et al., 2023). The most widely used measure in this area is the Literacy of Suicide Scale (LOSS; Caelear et al., 2022), available in a 26-item long form and a 12-item short form. It assesses knowledge across four domains—signs and symptoms, causes and nature of suicidality, risk factors, and treatment and prevention—using a true/false/I don't know format, scoring one point per correct answer. A key strength of the LOSS is that it provides a standardized instrument for assessing suicide literacy, reducing reliance

on ad hoc items that have often been used in previous studies (Torok et al., 2017). The LOSS has been validated in several cultural contexts, including Australia, China, Bangladesh, and Peru, and is frequently used alongside the SOSS to examine the interplay between knowledge and stigma (Arafat et al., 2021; Batterham et al., 2013b; Han et al., 2017a; Hernández-Torres et al., 2021).

In sum, while available instruments have advanced the assessment of suicide stigma and literacy, variations in their psychometric quality and cultural relevance limit comparability. These issues underscore the need to consider methodological and cultural factors, as discussed in the next section.

1.3.2 Methodological and Cultural Considerations

As highlighted in the review, many available instruments lack a clear conceptual definition of stigma or an explicit theoretical framework. Psychometric evaluation has often relied on internal consistency, with limited evidence of more robust validity indices. Furthermore, most validation studies have been conducted in high-income Western countries, raising concerns about generalisability. Few instruments capture discriminatory behaviours such as social distancing, which are central to many stigma theories (Nicholas et al., 2023).

Cross-cultural validations of the SOSS-SF show that items do not always perform consistently across settings. In the German adaptation, the three-factor structure was replicated, but descriptors such as “dedicated” and “lost” showed weaker loadings (Ludwig et al., 2020a). By contrast, a U.S. study confirmed the stability of the three-factor solution and demonstrated measurement invariance across gender groups (Williams et al., 2018). In Hong Kong, the SOSS-SF yielded a four-factor model including disgrace and selfishness, reflecting cultural concerns about morality and social responsibility (Fong et al., 2022). Similarly, in China, items such as “cowardly” and “pathetic” performed poorly, likely due to values emphasising filial duty and reluctance to criticise the deceased (Han et al., 2017a). These findings

illustrate that conceptions of death and suicide are deeply embedded in cultural norms, underscoring the need to interpret stigma measures with sensitivity to local beliefs about morality, social obligations, and attitudes toward the deceased.

Comparable challenges apply to suicide literacy. Because LOSS items are scored as correct or incorrect, Item Response Theory (IRT) provides the most appropriate methodological framework for validation. Nevertheless, several adaptations have relied on classical test theory, limiting psychometric robustness (Collado et al., 2023; Gupta et al., 2023; Jafari et al., 2023). Cross-cultural work has also shown the need for item modification. In China, for instance, the item “Men are more likely to commit suicide than women” was excluded because it conflicted with national epidemiological patterns (Han et al., 2017a).

Taken together, these methodological and cultural considerations highlight the need for rigorous psychometric testing, culturally sensitive adaptations, and the involvement of PWLE to ensure that instruments can validly capture suicide stigma and literacy across diverse populations.

1.4. Interventions to Reduce Suicide Stigma

Increasing recognition of the pervasive consequences of stigma has prompted growing interest in developing targeted interventions within suicide prevention. Although the mechanisms underlying stigma are multifaceted—spanning cognitive, affective, and structural domains—intervention research has progressively identified strategies capable of reducing its impact across populations and contexts.

The following sections provide an integrated overview of this evolving field, addressing: (1) the principal theoretical and empirical foundations of anti-stigma strategies within mental health and their emerging approaches; (2) current evidence on interventions specifically designed to reduce suicide-related stigma across diverse populations and settings; and (3) the expanding role of digital technologies as

innovative tools to enhance reach, personalization, and engagement in stigma-reduction efforts. Together, these sections outline the conceptual and methodological advances that inform contemporary approaches to suicide-stigma reduction, highlighting both their achievements and the challenges that continue to shape this critical domain of prevention research.

1.4.1 Overview of Anti-Stigma Strategies

Research on stigma reduction has traditionally focused on three types of interventions: education, social contact, and protest (Corrigan et al., 2005, 2012; Thornicroft et al., 2016). While protest strategies have shown limited and sometimes counterproductive results, educational and contact-based approaches remain the most widely implemented and empirically supported.

Educational interventions seek to improve knowledge and mental health literacy through structured information, professional training, or mass-media communication. Their main advantages are their broad dissemination and relatively low cost (Corrigan et al., 2012). Evidence indicates consistent short-term improvements in knowledge but weaker and less stable effects on attitudes and behaviour (Mehta et al., 2015). Furthermore, education is most effective when it includes interactive or contextual elements (e.g., group discussion or exposure to lived experience) that enhance engagement and relevance (Gronholm et al., 2017; Clay et al., 2020).

For this reason, education is often combined with contact-based approaches, which tend to generate greater attitudinal change. These interventions reduce stigma by facilitating interaction, either direct or indirect, with individuals who have lived experience of mental health problems. Effective contact requires an equal, respectful exchange that promotes empathy and perspective taking (Makhmud et al., 2022). Both face-to-face and indirect formats, such as video or online testimonies, have shown comparable improvements in attitudes and intended behaviour while being easier to implement on a larger scale (Clement et al., 2012). What seems most

influential is the authenticity and emotional resonance of the exchange rather than its format or duration (Makhmud et al., 2022; Walsh & Foster, 2020).

In addition to educational and contact-based strategies, other psychological mechanisms have also been explored as means to reduce stigma. A systematic review by Yanos and colleagues (2015) identified a range of techniques, such as cognitive restructuring, narrative work, and guided decision-making, that target the personal and interpretive processes sustaining stigmatizing beliefs. These strategies seek not only to correct misinformation but to reshape how individuals understand and position themselves in relation to mental health and social difference. By encouraging reinterpretation of lived experiences and fostering active agency, they may strengthen self-efficacy, motivation, and a sense of hope among participants.

Some mental health stigma interventions have successfully incorporated cognitive components to address internalized stereotypes and rigid thought patterns (García-Soriano et al., 2024). However, given the persistence of deeply ingrained prejudices and discriminatory behaviours, it may also be beneficial to focus on how individuals relate to their own thoughts and emotions rather than attempting to replace them directly (Krafft et al., 2018). Interventions that cultivate awareness, acceptance, and self-reflective engagement could therefore represent a complementary route to stigma reduction, encouraging more adaptive responses to internalized or socially shared stigma-related cognitions.

Anti-stigma interventions have been developed and evaluated across a wide range of mental health conditions, including schizophrenia (e.g., Cangas et al., 2017), depression (e.g., Howard et al., 2018), bipolar disorder (e.g., Painter et al., 2017), and autism (e.g., Staniland & Byrne, 2013), as well as stigma associated with mental health more broadly (Fong & Mak, 2022; Yamaguchi et al., 2019; Hajizadeh et al., 2024). These interventions have demonstrated short-term improvements in stigma-related knowledge, attitudes, and behaviours, and in help-seeking intentions (Song et al., 2023; Crockett et al., 2025).

Although these approaches have shown consistent short-term improvements in knowledge and attitudes, their impact on behaviour and enduring reductions in discrimination remains limited (Mehta et al., 2015; Thornicroft et al., 2016; Majeed et al., 2024). Interventions that integrate multiple components—addressing knowledge, attitudes, and behaviour across individual and community levels—tend to achieve more consistent and lasting outcomes (Rao et al., 2019; Majeed et al., 2024).

Given these limitations, recent research has focused on approaches that target the psychological processes underlying stigma (Masuda et al., 2017; Levin et al., 2016). Rather than trying to replace negative beliefs or suppress prejudiced thoughts, these interventions aim to modify how individuals relate to them by fostering openness, acceptance, and actions guided by personal values (Hayes et al., 2004; Lillis & Hayes, 2007). Within this framework, psychological flexibility (conceptualised as the ability to engage in valued actions while remaining open to difficult or stigmatizing thoughts) has been proposed as a central mechanism of change (Hayes et al., 2006; Masuda et al., 2009; Krafft et al., 2018).

Empirical studies support the link between psychological flexibility and stigma. Greater inflexibility has been associated with stronger prejudicial attitudes across groups (Levin et al., 2016), and similar associations have been observed in individuals with clinical symptomatology, where higher inflexibility mediated the relationship between depressive symptoms and public stigma toward others (Gaudiano et al., 2017). Experimental work further indicates that enhancing flexibility can reduce stigma. Masuda et al. (2007) compared a standard educational programme with one incorporating acceptance- and values-based components. Both reduced stigma toward people with mental health problems, but the latter achieved larger and more sustained effects. Comparable results have been reported in other studies, where flexibility-based interventions produced broader and longer-lasting reductions in stigma than traditional educational or contact conditions (Kenny & Bizumic, 2016; Krafft et al., 2018).

These benefits appear to stem from changes in how individuals experience and respond to prejudiced thoughts, specifically through processes such as cognitive diffusion, acceptance of internal experiences, and clarification of personal values, which facilitate prosocial action rather than mere attitude adjustment (Lillis & Hayes, 2007; Masuda et al., 2017). While this evidence base is still emerging, it suggests that addressing rigid and avoidant responses to stigma-related thoughts may promote more durable behavioural outcomes. However, individual-level interventions alone are unlikely to eliminate stigma. Lasting change requires their integration with broader structural and policy initiatives that challenge institutional discrimination and promote social inclusion (Nyblade et al., 2019; Rao et al., 2019; Thornicroft et al., 2016, 2022). By encouraging behaviours consistent with prosocial and inclusive values, these approaches may also contribute to reducing discrimination, not only by modifying beliefs but by promoting everyday actions aligned with lower-stigma norms. Nevertheless, research assessing such behavioural outcomes remains limited (Zamorano et al., 2023). Acceptance- and values-based approaches therefore represent a promising complement to educational and contact-based strategies, linking psychological mechanisms with social and structural dimensions of stigma reduction.

1.4.2 Evidence from Interventions Targeting Suicide Stigma

Research on stigma reduction in mental health is extensive, yet interventions specifically targeting suicide stigma remain limited. This emerging field reflects growing recognition of stigma's role in hindering help-seeking, reinforcing discrimination, and impeding recovery (Batterham et al., 2022). Given the moral, religious, and cultural dimensions surrounding suicide, intervention design and evaluation require context-sensitive approaches (Bertolote & Wasserman, 2021; Naghavi et al., 2019). Despite these challenges, recent studies have begun to demonstrate the feasibility and impact of strategies aimed at reducing suicide-related stigma.

Existing evidence indicates that suicide stigma interventions have been implemented across diverse populations and settings, including the general public, students, rural workers, and suicide attempt survivors. Table 1 summarizes representative programs, highlighting the diversity of formats and evaluation designs employed in this field. Initiatives combine psychoeducation and contact, which have shown consistent—though modest—effects on increasing suicide literacy and reducing stigmatizing attitudes. These outcomes are broadly comparable to those reported for anti-stigma programs in general mental health, underscoring the deeply rooted nature of beliefs and attitudes about mental problems and suicide that make them particularly resistant to change (Morgan et al., 2018; Thornicroft et al., 2016). Overall, findings remain positive but heterogeneous, shaped by enduring social and cultural norms that continue to challenge efforts toward sustained attitudinal change.

Table 1

Summary of Evaluated Programs Designed to Reduce Suicide Stigma.

Intervention Name (Authors, Year)	Country	Sample Size (Mean Age)	Population	Duration	Study Design	Delivery Format	Components	Main Findings
National Suicide Prevention Lifeline & Live Through This (Rogers et al., 2018)	USA	266 (26.11)	Adults from general population	20 minutes (single session)	Randomized controlled trial (RCT) (3 arms: psychoeducation, interpersonal exposure, control [diabetes-related health website]).	Online	Education and contact	Both interventions significantly reduced suicide-related stigma compared to control; ~24% achieved clinically significant change; effects stronger and sustained among those without prior suicide exposure.
SCARF (Perceval et al., 2019)	Australia	255 (44.4)	Rural workers and farmers	4-hour workshop (single session)	Non-randomized pre-post study with 3-month follow-up	In person	Education and contact	Significant improvements in suicide literacy, confidence to assist, and mental well-being; reduced stigma (subscale); however, increased glorification/normalization of suicide at follow-up.
The Ripple Effect (Kennedy et al., 2020)	Australia	169 (30-64)	Farming men with lived experience of suicide	5 online modules (self-paced)	Non-randomized pre-post study	Online	Education and contact	Standardized measures showed no significant stigma reduction, but qualitative feedback and goal setting indicated more openness to seek support, share experiences, and support others. Suicide literacy remained high with minor improvement in specific areas; some increase in perceived normalization of

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								suicide, interpreted as greater recognition of survivors' resilience.
Mental Health First Aid for the Suicidal Person (Bond et al., 2021)	Australia	284 (41)	Adults from the general population	4-hour workshop (single session)	Non-randomized pre-post study with 6-month follow-up	In person	Education and contact	Improved beliefs about suicide and confidence in supporting a suicidal person; stronger intentions to use recommended helping actions and less reliance on non-recommended ones; reductions in stigma ("weak-not-sick" and "dangerous/unpredictable" views); actual helping behaviors showed more direct questioning and supportive listening, and less reliance on emergency services. High course satisfaction.
SUPRANET Public Awareness Campaign – "The Question of Your Life" (van der Burgt et al., 2021)	Netherlands	6,773 (adults >18; repeated cross-sectional samples)	General population	Campaign waves from Feb 2017 to Nov 2018 (2 years)	Quasi-experimental repeated cross-sectional surveys	Mass media	Education	Greater awareness linked to more openness to seek help and recognition of the 113 helpline, but also to higher perceived taboo on suicide and slightly lower evaluation of professional help; no effect on depression stigma.
8 Lives (Dreier et al., 2023)	Germany	268 (37.2)	Adults, including people with suicidal ideation/attempt, those bereaved, carers, and	8 online chapters (approx. 1.5–5 hours; self-paced)	Non-randomized pre-post study (mixed methods)	Online	Education and contact	Participants showed higher suicide literacy, small gains in self-efficacy to seek support, and reduced self-stigma. No significant change in perceived public stigma. Qualitative interviews highlighted that video testimonies and sharing personal narratives increased openness, self-reflection, and help-

			general public interested in suicidality					seeking. Some participants found the content emotionally demanding; dropout was high.
HEYLiFE (Grosselli et al., 2024)	Germany	745 (15.5)	Secondary school students	180 minutes (1–2 sessions)	RCT (2 arms: HEYLiFE intervention and waitlist control)	In person	Education and contact	Short-term: increased knowledge and reduced fear, but also less prosocial emotions and greater social distance towards suicidal peers, especially in younger students and males. Mid-term: improved help-seeking intentions and lower rise in suicide risk factors and social distance compared to control.
Web-based education and contact intervention (Oexle et al., 2025)	Germany	2043 (49.37)	Adults from general population	Single brief exposure (text or video; 657 words or approx. 6 min)	RCT (6 arms: contact-based video, contact-based text, education-based video, education-based text, contact control [heart attack recovery story], education control [cardiac arrest information])	Online	Education and contact	The interventions did not outperform control conditions in reducing suicide stigma or suicide normalization; both outcomes decreased from pre to post in intervention and control groups. Engagement was higher for video than text materials, and for contact based than education-based content, as reflected by longer time spent on the materials.

Approaches addressing self-stigma, such as peer-led disclosure or recovery-oriented interventions, appear particularly promising in enhancing self-esteem and diminishing internalized shame among suicide attempt survivors (Sheehan et al., 2023). Yet outcomes may depend on participants' prior exposure to suicide, as intervention effects have been shown to differ according to exposure status, with individuals without prior exposure showing larger and more sustained reductions in suicide-related stigma (Rogers et al., 2018). These interventions also appear to foster help-seeking intentions, either directly by increasing confidence to assist others (Bond et al., 2021) or indirectly through greater openness and reduced shame among those with lived experience of suicidality (Sheehan et al., 2023). Consistent with broader evidence on mental health literacy, improvements in knowledge and empathy may enhance both the willingness to seek professional help and to encourage it within one's social network (Reavley & Jorm, 2012; Pretorius et al., 2022; Waldmann et al., 2020).

As highlighted by Oexle et al. (2022b), reducing negative judgments toward suicidal individuals does not automatically yield protective effects. Their research shows that lower stigma can, in some contexts, coincide with increased suicide normalization—defined as the perception of suicide as an understandable or acceptable response to suffering. When empathy-driven messages are not clearly framed within a preventive and recovery-oriented perspective, they may unintentionally weaken social norms that discourage suicidal behaviour. This phenomenon, and its more pronounced manifestation as “glorification,” has been observed in interventions such as SCARF and The Ripple Effect (Perceval et al., 2020; Kennedy et al., 2020). Both highlight the ethical need to design anti-stigma efforts that convey compassion while reinforcing the value of life, connectedness, and professional support.

Despite encouraging results, current evidence is constrained by important methodological limitations. Many studies rely on small, convenience samples and lack follow-up assessments beyond the short term, making it difficult to evaluate the

persistence of observed effects. Randomised controlled designs remain scarce, and attrition rates are often high. Most evaluations assess attitudinal change through self-reported outcomes, leaving uncertainty about whether improved perceptions lead to sustained behavioural or social impact. Moreover, few interventions systematically assess potential adverse or iatrogenic effects, such as emotional distress or the unintentional reinforcement of suicidal narratives, despite their ethical relevance (Thornicroft et al., 2016; Corrigan & Rao, 2012). Several of these limitations directly informed the design of the present dissertation. Specifically, the studies reported here address the absence of validated instruments for Spanish-speaking populations (Study 1), the lack of large-scale descriptive data on suicide stigma and literacy in this context (Study 2), and the scarcity of methodologically rigorous evaluations (including randomised designs and follow-up assessments) of suicide stigma interventions adapted to Spanish-speaking adults (Studies 3–5). Together, these studies aim to contribute empirically to an area where evidence remains nascent.

In summary, interventions targeting suicide stigma demonstrate that attitudinal change is achievable, though typically modest and context dependent. Their success depends not only on design and content but also on cultural and population-specific adaptation, including factors such as baseline literacy and prior exposure to suicide, which can shape both effectiveness and the risk of unintended consequences (Eskin et al., 2016; Phillips & Luth, 2018). Future efforts should combine rigorous and longitudinal evaluation with tailored, culturally sensitive approaches that integrate educational, contact-based, and recovery-oriented components to foster empathy, prevention, and social inclusion.

1.4.3 Digital Technologies in Anti-Stigma Interventions

Recent years have seen growing interest in using digital technologies to expand the reach and personalization of anti-stigma interventions. These innovations translate evidence-based approaches into accessible online formats that harness interactive and immersive technologies to enhance attitudinal and behavioural outcomes (Rodríguez-Rivas et al., 2022). Mobile health (mHealth) and web-based

programs offer flexible, low-cost, and anonymous options that overcome geographical and social barriers to participation, particularly within suicide prevention, where digital access can engage individuals who might otherwise avoid in-person settings due to fear of judgment or confidentiality concerns (Rassy et al., 2021).

Empirical evidence shows that online anti-stigma interventions can be as effective as face-to-face programs. A meta-analysis by Goh et al. (2021) found that web-based interventions achieved small-to-moderate reductions in public stigma while offering greater accessibility and scalability. Digital platforms, therefore, offer opportunities to combine information dissemination with exposure to lived-experience narratives in safe and scalable ways. Several digital programs addressing suicide stigma, such as *The Ripple Effect* (Kennedy et al., 2020) and *8 Lives* (Dreier et al., 2023), have shown that combining education with lived-experience storytelling can improve understanding and reduce prejudicial attitudes.

The growing relevance of digital strategies is particularly evident in low- and middle-income settings, where limited infrastructure, social barriers, and stigma-related concerns often restrict access to mental health resources. As highlighted by Naslund and Deng (2021), the rapid expansion of mobile and online technologies in these contexts offers an affordable and scalable means to challenge stigma through education, peer support, and public advocacy. This perspective underscores the global equity dimension of digital innovation, reinforcing its potential as a tool for inclusion in stigma-reduction efforts.

Beyond evaluating delivery formats, recent developments have focused on using digital tools to capture users' experiences in real time and enable more interactive forms of engagement. Ecological Momentary Assessment (EMA) and Ecological Momentary Intervention (EMI) techniques allow for real-time monitoring of thoughts, emotions, and behaviours in everyday settings, providing a fine-grained understanding of how stigma and suicidal ideation fluctuate in daily life (Santangelo et al., 2017; Shiffman et al., 2008). These tools have shown promising results when

applied to highly stigmatized groups, such as individuals with obesity (Bidstrup et al., 2024) and relatives of people with substance-use disorders (Jones et al., 2024), offering valuable insights into contextual predictors of stigma. Their implementation in suicide research also appears beneficial: EMA and EMI can track shifts in emotional distress and suicidal thinking while enabling rapid, personalized feedback (Jiménez-Muñoz et al., 2022). Although digital interventions have increasingly targeted self-harming behaviours and suicidal thoughts through mobile applications, research specifically examining their impact on suicide-related stigma remains limited.

In recent years, digital approaches have evolved beyond static online education to include more engaging multimedia formats. Digital video interventions—such as short documentaries, animations, and digital storytelling—have shown positive effects on mental health literacy and stigma reduction among young audiences (Ito-Jaeger et al., 2022). Parallel developments have occurred in gamification and immersive technologies. Serious games and virtual reality (VR) simulations employ interactive environments to foster perspective-taking and emotional learning. The meta-analysis by Rodríguez-Rivas et al. (2022) found that innovative technology-based interventions—including video games, VR, and electronic contact—achieved a consistent medium effect size in reducing public stigma toward mental illness. These tools leverage immersion and active participation to modify attitudes more effectively than didactic instruction alone. For example, virtual simulations allowing users to embody another person's viewpoint, such as *The Machine to Be Another*, have been shown to enhance empathy and diminish avoidance and fear responses (Cebolla et al., 2021; Ventura et al., 2018). Likewise, serious games such as *Stigma-Stop* (Cangas et al., 2017) or *esTOCma* (García Soriano et al., 2024) demonstrate the potential of gamified learning to reduce prejudice and promote understanding through experiential learning.

Taken together, digital technologies represent a promising yet still emerging avenue for stigma reduction. By integrating psychoeducation, contact, and real-time assessment within accessible and interactive formats, they can expand reach and

improve personalization. Digital interventions should therefore complement, rather than replace, community and structural initiatives aimed at promoting inclusion and reducing discrimination. Ongoing research should further examine the long-term effectiveness, safety, and contextual adaptability of these approaches to ensure that technological innovation contributes to equitable and responsible suicide-stigma reduction.

Overall, the reviewed evidence highlights suicide stigma as a key cross-cutting barrier that affects help-seeking, recovery, and the effectiveness of prevention strategies. At the same time, important gaps remain regarding (a) the availability of culturally validated assessment tools, (b) the understanding of stigma and literacy levels in Spanish-speaking populations, and (c) the development and evaluation of scalable interventions targeting these processes.

To address these gaps, this doctoral thesis is structured into five studies. Study 1 focuses on the validation of key instruments; Study 2 examines levels and predictors of suicide stigma and literacy; Study 3 evaluates a mobile application intervention in a feasibility and qualitative study (Breaking the Silence); Study 4 presents the RCT protocol; and Study 5 provides initial insights from its implementation.

CHAPTER 2

Objectives

As discussed in the previous sections, stigma toward suicide represents not only a major barrier to help-seeking among those in need, but also an obstacle to raising awareness in the general population about a serious public health concern that urgently requires attention. Although stigma has been more extensively examined in relation to other mental health conditions, suicide stigma remains an emerging field of study, with significant gaps in Spanish-speaking populations. Importantly, the literature has consistently identified suicide literacy as a predictor of stigma, underscoring the need to better understand how both knowledge and misconceptions about suicide interact with social attitudes and beliefs. However, several important gaps persist in the assessment and intervention of suicide stigma and literacy, especially in Spanish-speaking contexts.

First, although internationally validated measures of suicide stigma and suicide literacy have been developed and applied across cultures, research in Spanish-speaking contexts remains scarce. In addition, while there are many well-validated tools for assessing suicidal ideation, brief instruments tailored to online contexts remain scarce. Such measures are particularly relevant for large-scale, accessible interventions. Reliable and culturally adapted measures of stigma, literacy, and suicidal ideation are essential for both the evaluation and the design of interventions aimed at suicide prevention.

Second, to address a problem so deeply embedded in cultural and social perceptions, it is essential to examine the levels and predictors of both stigma and suicide literacy within the target population. Understanding how these variables operate in each sociocultural context is a necessary step toward developing context-sensitive and effective interventions for suicide prevention.

Finally, although existing interventions to reduce suicide stigma and improve literacy have shown modest yet promising effects, few have integrated evidence-based components such as education, contact, and values-based or psychological flexibility approaches within a single framework. Moreover, no online, evidence-based programs have been specifically developed and tested for Spanish-speaking

populations. Addressing these gaps is essential to advance scalable, culturally relevant, and digitally delivered suicide prevention efforts.

The main goal of this dissertation is to examine suicide literacy and stigma in Spanish-speaking populations, and to develop and validate a mobile application-based intervention aimed at addressing both aspects and enhancing help-seeking intentions. This goal also includes evaluating the effectiveness and acceptability of the intervention. This research is expected to advance knowledge about suicide stigma and literacy in Spanish-speaking populations, while also informing the development of scalable, culturally sensitive digital interventions that can foster help-seeking and strengthen suicide prevention efforts at the community level.

The specific objectives of this dissertation are:

1. To adapt and validate into Spanish assessment instruments measuring suicide stigma, suicide literacy, and suicidal ideation, and to examine their psychometric properties (Study 1).
2. To identify and analyse beliefs and attitudes toward suicide among individuals, to gain a deeper understanding of stigma and the lack of knowledge surrounding this issue (Study 2).
3. To identify risk factors and predictors of suicide stigma and suicide literacy (Study 2).
4. To examine sociodemographic and clinical variables associated with suicide stigma and suicide literacy (Study 2).
5. To design and develop a mobile application intervention aimed at improving suicide literacy, reducing suicide stigma, and fostering help-seeking intentions (Studies 3 and 4).

6. To explore the feasibility and preliminary effectiveness of the mobile application in increasing suicide literacy, reducing suicide stigma, and promoting help-seeking intentions (Study 3).
7. To evaluate the acceptability and usability of the mobile application, and to conduct a qualitative analysis of individuals' experiences and opinions regarding its use (Study 3).
8. To design an RCT protocol to evaluate the effects of the mobile application on suicide literacy, suicide stigma, and help-seeking outcomes (Study 4).
9. To present initial insights from the ongoing RCT, including preliminary outcome patterns observed among participants who completed the mobile application (Study 5)

CHAPTER 3

Methods

This chapter presents the five studies that constitute this doctoral thesis. Each study is introduced individually, including its theoretical framework, methodology, results, and discussion. All studies received ethical approval, either from the Ethics Committee of the University of Valencia (2024-PSILOG-3563219) or from the Ethics Committee of Research of the Autonomous Community of Aragón (CEICA; PI20/294), and were conducted in accordance with the principles of the Declaration of Helsinki (see General Annex)

Study 1

Validation of Three Scales for Enhanced Suicide Prevention in Spanish-Speaking Populations: Suicidal Ideation, Stigma, And Literacy

This study has been published as: Pierantonelli, M., Mira, A., Martínez-Gregorio, S., Zamora, Á., Diego-Pedro, R., Escrivá-Martínez, T., ... & Baños, R. M. (2024). Validation of three scales for enhanced suicide prevention in Spanish-speaking populations: Suicidal ideation, stigma, and literacy. *Journal of Psychiatric Research*, 180, 190-197.

3.1.1 Background

The global burden of suicide is alarming, with over 700,000 deaths reported annually (WHO, 2023). In Spain, suicide rates have risen for the third consecutive year, becoming the leading cause of external deaths (Instituto Nacional de Estadística, 2023). Similarly, Latin America has seen a steady increase in suicide deaths over the past three decades (Dávila-Cervantes, 2022). These trends underscore the need for reliable, valid, and culturally accurate screening instruments (Campos et al., 2023). Given the escalating trends and the significant impact on public health, prioritizing prevention efforts is crucial to reducing the incidence of suicide worldwide.

Suicidal ideation is a key predictor of completed suicide (Ribeiro et al., 2015), emphasizing the need for effective assessment tools like the Suicidal Ideation Attribute Scale (SIDAS; Van Spijker et al., 2014). The scale's brevity makes it particularly suitable for epidemiological surveys, and its online administration capabilities facilitate large-scale and remote assessments, enhancing its role in suicide prevention. Furthermore, SIDAS has been recognized as one of the most promising tools for suicide research and prevalence studies (Batterham et al., 2015). So far, it has been validated in several countries, including China (Han et al., 2017a), Canada (Gauvin et al., 2022), and more recently, Lithuania (Gužas et al., 2024); however, it has yet to be validated in the broader Spanish-speaking population.

Despite the preventive potential of early suicidal ideation detection, the pervasive stigma surrounding suicide continues to be a significant barrier. Stigma discourages at-risk individuals from seeking help and significantly hampers effective prevention efforts (Calear et al., 2014; Tang et al., 2022). This stigma perpetuates a cycle of worsening symptoms, such as sadness and isolation, which only makes intervention more challenging (Schomerus et al., 2015; Han et al., 2018a).

Public stigma toward suicide involves stereotypes by social groups, leading to labelling, loss of status, segregation, and discrimination (Link & Phelan, 2001; Corrigan et al., 2005). Suicide is more stigmatized than other mental disorders or illnesses

(Sheehan et al., 2017b). People with a history of suicidal behaviour often evoke fear and are seen as selfish, incompetent, or emotionally weak (Carpiniello & Pinna, 2017; Ludwig et al., 2020a; Sheehan et al., 2017a). Such conceptions have the potential to result in demoralization and the deterioration of interpersonal relationships, or a sense of disconnection, which in turn serve to heighten the risk of suicidality (Costanza et al., 2020).

While recognized as a barrier to help-seeking and suicide prevention, the impact of suicide stigma is underestimated in recent research (Mok et al., 2020; Tang et al., 2022). The Suicide Stigma Scale - Short Form (SOSS-SF; Batterham et al., 2013a) is a widely used and validated tool to assess public stigma toward people who died by suicide. It has shown high reliability and validity in countries such as the USA (L. Williams et al., 2018), China (Han et al., 2017a), Jordan (Aldalaykeh et al., 2020), Germany (Ludwig et al., 2020b), and Bangladesh (Arafat et al., 2022).

Accurate knowledge about suicide is crucial for reducing stigma and promoting help-seeking (Batterham et al., 2013b; Karakaya et al., 2022; Nakamura et al., 2022). Addressing misconceptions is vital for prevention, as those unaware of the risks are less likely to seek help, while those informed are more likely to encourage it (Žilinskas & Lesinskienė, 2023; Cruwys et al., 2018). Caelear et al. (2022) developed the Suicide Literacy Scale - Short Form (LOSS-SF) to measure suicide-specific knowledge. The LOSS-SF has demonstrated good psychometric properties in various communities and diverse cultures, such as in Iran (Jafari et al., 2023), Peru (Baños-Chaparro et al., 2023), Nepal (Gupta et al., 2023), Malaysia (Phoa et al., 2022), China (Han et al., 2017a), and Australia (Batterham et al., 2013b).

Both the SOSS-SF and LOSS-SF have been validated in Spanish (Collado et al., 2023) and Latino (Baños-Chaparro et al., 2023; Hernández-Torres et al., 2021) populations. Nevertheless, this study seeks to overcome the limitations identified in previous research. On the one hand, the robustness and validity of the scales will be improved by applying the appropriate Item Response Theory (IRT) method for the LOSS-SF. On the other hand, previous studies focused on specific populations, such

as medical students in Puerto Rico (Hernández-Torres et al., 2020) or participants with low educational levels in Peru (Baños-Chaparro et al., 2023). The present validation addresses this limitation by considering the diversity of the Spanish-speaking population, ensuring that the measures are applicable in diverse contexts within this community.

Therefore, the present study aims to validate and assess the psychometric properties of the three scales (SIDAS, SOSS-SF, and LOSS-SF) in a Spanish-speaking sample (from Spain and Latin America). This research addresses a critical gap in the field regarding effective suicide prevention measures for Spanish-speaking individuals. By providing validated tools tailored to this demographic, we seek to improve the accuracy and effectiveness of interventions designed to address this urgent issue.

3.1.2 Method

Participants

A total of 678 participants completed the survey. The mean age was 28.1 (SD=10.9; range = 18-77 years). Regarding gender, 78.8% identified themselves as female. Inclusion criteria were to be at least 18 years old and fluent in Spanish. The sample size is in the range of previous studies and shares similar characteristics in a different cultural context (Han et al., 2017a; Arafat et al., 2021).

Participants from Spain and Latin America were recruited through convenience sampling. The study was promoted by several universities (Valencia University, Jaume I University, Zaragoza University in Spain, and Universidad de las Américas in Mexico). In addition, flyers and social media were used to reach a diverse and representative sample in both regions.

Of the participants, 412 were from Spain (60.9%) and 264 from Latin America (39.1%), with 90.5% of the latter being from Mexico and 9.5% from other Latin American countries.

Table 1 provides an overview of the sample characteristics, encompassing both the entire sample and those individuals who reported experiencing suicidal ideation within the past month (indicated by a score above 0 on the SIDAS). This subsample was called *ideators* and represented 22.4% (n = 150) of the total sample. The *non-ideators* correspond to those who scored 0 on the SIDAS (n = 444, 65.4%). 82 participants did not respond to the SIDAS, and 2 gave incomplete answers, so they could not be included for the validation of this scale but were considered for the rest of the analyses.

Table 1.*Sociodemographic and Clinical Characteristics*

	Total (n=678)	Ideators (n=150)	Non-Ideators (n=444)	χ^2 or t
Gender (n,%)				7.84*
Women	534 (78.9)	109 (73.2)	358 (80.6)	
Men	128 (18.9)	34 (22.8)	80 (18)	
Non-binary	7 (1)	4 (2.7)	2 (0.5)	
Other	8 (1.2)	2 (1.3)	4 (0.9)	
Age (years) (M,SD)	28.10 (10.97)	27.6 (9.8)	27.3 (10.9)	0.25
Region (n,%)				1.61
Spain	412 (60.8)	81 (55.1)	273 (61.5)	
Latin America	262 (38.6)	66 (44.9)	171 (38.5)	
Education (n,%)				3.09
No studies	2 (0.3)	0 (0)	2 (0.5)	
Primary school	6 (0.9)	1 (0.7)	4 (0.9)	
Secondary school	125 (18.4)	23 (15.5)	94 (21.2)	
Vocational training/ High school	196 (28.9)	46 (31.1)	130 (29.3)	
University studies	347 (51.2)	78 (52.7)	214 (48.2)	
Occupation (n,%)				1.93
Employed	331 (62.2)	79 (65.3)	192 (57.5)	
Unemployed	201 (37.8)	42 (34.7)	142 (42.5)	
Religious belief (n,%)				0.47
None	262 (38.7)	54 (36.2)	177 (39.9)	
Any religion	415 (61.2)	95 (63.8)	267 (60.1)	
Information on sources of aid (n,%)				1.83
Yes	326 (48.1)	79 (53)	205 (46.1)	
No	351 (51.9)	70 (46.9)	239 (53.8)	

Stigma – SOSS-SF (M,SD)	2.40 (0.46)	2.38 (0.45)	2.42 (0.46)	0.88
Stigma	1.70 (0.62)	1.63 (0.61)	1.73 (0.61)	
Isolation/Depression	3.53 (0.83)	3.51 (0.86)	3.56 (0.81)	
Glorification/ Normalization	2.69 (0.68)	2.76 (0.69)	2.67 (0.67)	
Literacy – LOSS-SF (M, SD)	6.93 (2.07)	6.97 (2.16)	6.97 (2.07)	-0.02
Signs and symptoms	1.38 (0.86)	1.42 (0.88)	1.36 (0.86)	
Causes or nature	2.24 (1.06)	2.20 (1.04)	2.28 (1.08)	
Risk factors	1.40 (0.86)	1.45 (0.93)	1.41 (0.87)	
Treatment and prevention	1.91 (0.31)	1.90 (0.32)	1.92 (0.30)	
Depression - PHQ9 (M, SD)	7.13 (5.65)	12.3 (6.3)	5.3 (4.1)	12.62***
Anxiety - GAD7 (M, SD)	4.87 (4.37)	7.3 (4.9)	4 (3.8)	5.32***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$

Procedure

The study received ethical approval from the Aragon Clinical Research Ethics Committee at Zaragoza University. Participants completed a 25-minute survey via an online Qualtrics link (Qualtrics, 2024). They were provided with information on local help resources for instances of suicidal ideation or suicide attempts and had access to the principal investigator's contact details throughout their participation.

An independent back-translation from English to Spanish was conducted. A native Spanish-speaking translator with subject expertise completed the initial translation, while a bilingual speaker with no prior knowledge of the original text performed the back-translation. The two versions were compared to ensure semantic and conceptual equivalence. External experts from each region (Spain and Latin America) reviewed the final version to ensure cultural relevance. In Latin America, this review took place in Mexico, where the participating university is located.

Measures

Public Stigma of Suicide. The Stigma of Suicide Scale – Short Form (SOSS-SF; Batterham et al., 2013a) uses 16 adjectives to describe a person who dies by suicide.

Aimed at the general population, it theoretically proposed a latent structure with three factors: Stigma (eight items), Glorification/Normalization (four items), and Isolation/Depression (four items). Items are scored on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). High scores indicate strong agreement with the description. The scale shows a robust factor structure and solid internal consistency. Previous studies presented reliability results ranging from .64 to .88 for the three subscales in several cultural contexts (Nicholas et al., 2023).

Suicide Literacy. The Literacy of Suicide Scale - Short Form (LOSS-SF; Caele et al., 2022) is a 12-item scale assessing knowledge about suicide in four domains: signs and symptoms, causes, risk factors, and treatment/prevention. Responses present three alternatives ("true," "false," "don't know"), with points awarded for correct answers. Consequently, the items present a binary scale (correct/incorrect). Higher scores indicate greater suicide-related knowledge, assuming a unidimensional scale. The scale has shown good psychometric properties when it was evaluated in the IRT framework (Aldalaykeh et al., 2020; Arafat et al., 2022).

Clinical variables. Suicidal Ideation Attributes Scale (SIDAS; Van Spijker et al., 2014) comprises 5 items through which frequency, controllability, closeness to attempts, distress, and interference with daily activities in the last month are assessed. Responses are given on an 11-point Likert scale. Scores above 21 would indicate a high risk of suicidal behaviour. The unidimensional structure has obtained evidence of adequacy. The measure has shown good psychometric properties and excellent internal consistency ($\alpha = .91$) (van Spijker et al., 2014).

Patient Health Questionnaire-9 (PHQ-9; Spitzer et al., 1999; Diez-Quevedo et al., 2001). is a nine-item scale based on DSM-IV criteria for major depression. Participants respond on a 4-point Likert scale reflecting symptom frequency over the past two weeks. Higher scores indicate greater severity of depressive symptoms. The measure has shown adequate sensitivity (0.87) and specificity (0.88) (Diez-Quevedo et al., 2001).

The Generalized Anxiety Disorder-7 item scale (GAD-7; Spitzer et al., 2006; García-Campayo et al., 2010) assesses anxiety symptoms over the past two weeks, rated from 1 (No day) to 4 (Almost every day). Scores range from minimal (0-4) to serious (14-20) anxiety levels. It has excellent internal consistency, with a Cronbach's alpha of 0.93 (García-Campayo et al., 2010).

Other measures. Participants were asked about their demographic characteristics such as gender, age, country of birth, education, employment, and marital status.

Data Analysis

The analysis was conducted using SPSS 27 and R 4.2.2. Descriptive statistics characterized the sample and calculated instrument scores for the total sample and suicidal ideation subsamples. Differences between ideators' and non-ideators' scores were analysed using chi-square or t-tests.

Confirmatory Factor Analysis (CFA) was performed with “lavaan” (Rosseel, 2012) to compare the Spanish validation of SOSS and SIDAS with the original scales. Due to non-normal data, robust methods like Maximum Likelihood with Robust standard errors (MLR) were used. Missing values were estimated using Full Information Maximum Likelihood. Model fit was assessed with CFI, TLI, RMSEA, and SRMR, using established criteria: CFI and TLI ≥ 0.90 , RMSEA ≤ 0.06 , and SRMR ≤ 0.08 (Bentler, 1992; Hu & Bentler, 1999; Marsh, 2004; Kline, 2015). Reliability was evaluated with McDonald's omega (ω), considered satisfactory at ≥ 0.70 . Gender invariance of SOSS and SIDAS was tested by comparing three nested models: configural, metric, and scalar, using criteria for chi-square, CFI, RMSEA, and SRMR differences (Cheung & Rensvold, 2002). Metric invariance was indicated by a change of < -0.005 in CFI, < 0.010 in RMSEA, and < 0.025 in SRMR. Scalar invariance was indicated by a change of < -0.005 in CFI, < 0.010 in RMSEA, and < 0.005 in SRMR (Chen, 2007). Although the presence of extreme outliers was low, the potential effect of outliers at item level was analyzed, repeating the analyses without the cases with outliers. As the conclusion of both

analyses did not differ, the Results section offers the results for the initial analyses (with outliers).

This analysis couldn't be performed for the LOSS-SF due to its binary correct/incorrect items. Instead, its psychometric properties were evaluated using IRT with the R packages “mirt” and “ggmirt.” (Chalmers, 2012; Masur, 2022). One-parameter (1PL/Rasch), two-parameter (2PL), and three-parameter (3PL) logistic models were estimated, assuming local independence and unidimensionality. A CFA was conducted on the twelve items before estimating IRT models using Weighted Least Squares (WLSMV). 3PL model estimates three parameters for the items: (a) discrimination, (b) difficulty, and (c) guessing. 2PL model constraints c parameter to be zero, and 1PL adds the constriction also to parameter a. Model fit was compared using log-likelihood, Akaike Information Criterion (AIC), and Bayes Information Criterion (BIC), with lower values indicating better fit. Additionally, chi-square tests were carried out to compare them.

Scale reliability in the IRT framework was assessed using Item Information Curves and the Test Information Curve. Differential item functioning (DIF) analysis for gender was conducted using the R package “lordif.” (Choi et al., 2011). Three nested models were estimated: Model 1 considers the cumulative probability of the true response based on the latent trait; Model 2, which includes the impact of the grouping variable (gender) on this likelihood (uniform DIF); and Model 3 adds the interaction between gender and the trait (non-uniform DIF). Models were compared using chi-square differences and McFadden pseudo-R square differences, with values above .13 considered moderate and above .26 considered large (Zumbo, 1999).

3.1.3 Results

Psychometric Properties of SIDAS

Since the SIDAS specifically measures suicidal ideation, its validation is pertinent only to individuals identified as ideators. Consequently, the CFA was conducted exclusively on this subsample, which accurately represents the construct

of interest. The CFA for the SIDAS demonstrated a well-fitting single-factor structure within the ideators sample, with acceptable fit indices ($\chi^2(5) = 9.663$, $p < .001$, CFI = .98, RMSEA = .08, SRMR = .04). Four out of the five items exhibited significant and strong factor loadings (>0.5). However, while item 2 displayed a statistically significant factor loading, its association with the factor was comparatively weaker (0.26). The internal consistency of the scale was adequate ($\omega = 0.73$).

As is shown in Table 2, the scale shows invariance at the scalar level, indicating that both, factor loadings and intercepts, are equal in men and women. In comparing the scalar and metric models, the increase in SRMR in the scalar model slightly exceeds the recommended cut-off point. However, as the change is not statistically significant in terms of chi-square and the rest of the indicators show adequate results, evidence of invariance is considered to be obtained.

Table 2.

Goodness-of-Fit Indices for Each Group Studied and for The Set of Nested Models to Test for Measurement Invariance by Gender for SIDAS.

Model	χ^2	df	p	$\Delta \chi^2$	Δ df	p	CFI	Δ CFI	SRMR	Δ SRMR	RMSEA	Δ RMSEA
<i>Gender</i>												
Configural	20.721	10	.02	--	--	--	.975	--	.043	--	.100	--
Metric	20.596	14	.11	2.374	4	.667	.983	.008	.064	.021	.070	-.030
Scalar	24.800	18	.13	4.297	4	.367	.981	-.002	.071	.007	.065	-.005

Note. df = degrees of freedom; Δ = differences

Psychometric properties of SOSS-SF

The three-factor model for SOSS-SF proposed by Batterham et al. (2013) showed adequate fit indices ($\chi^2(101) = 319.353$, $p < .001$, CFI = .93, RMSEA = .06, SRMR = .06). The 16 items had significant factor loadings, mostly between 0.4 and 0.7, except for item 3 ("dedicated"), which had a weaker loading (0.35) (see Study 1 Annex). Excluding this item did not improve fit indices, so it was retained for integrity. As expected, the internal consistency of this factor (glorification) was questionable ($\omega = 0.67$). However, the subscales of Stigma ($\omega = 0.86$) and Depression ($\omega = 0.77$) showed good reliability. The scale was gender invariant at the scalar level (see Table 3).

Table 3.

Goodness-of-Fit Indices for Each Group Studied and for the Set of Nested Models to Test for Measurement Invariance by Gender for SOSS-SF

Model	χ^2	df	p	$\Delta \chi^2$	Δ df	p	CFI	Δ CFI	SRMR	Δ SRMR	RMSEA	Δ RMSEA
<i>Gender</i>												
Configural	426.198	202	< .001	--	--	--	.926	--	.060	--	.060	--
Metric	438.905	215	< .001	13.456	13	.41	.925	-.001	.063	.003	.058	-.002
Scalar	476.866	228	< .001	38.992	13	< .001	.917	-.008	.065	.002	.059	.001

Note. df = degrees of freedom; Δ = differences

Psychometric properties LOSS-SF

Before the IRT models were estimated, a CFA was carried out with the twelve items loading on a single factor. The model did not adjust satisfactorily the data ($\chi^2(54) = 112.52$, $p < .001$, CFI = .841, RMSEA = .083, SRMR = .083). An analytical inspection of the model showed that items four and six did not present a statistically significant factor loading ($\beta = .10$, $p > .05$, and $\beta = .14$, $p > .05$, respectively). Both items were removed, and a new CFA was tested. This adapted version presented an adequate fit to data: $\chi^2(35) = 44.258$, $p < .001$, CFI = .929, RMSEA = .065, SRMR = .067. All the factor loadings were statistically significant and ranged between .25 and .80.

Table 4.

Comparative Fit Indexes of LOSS-SF

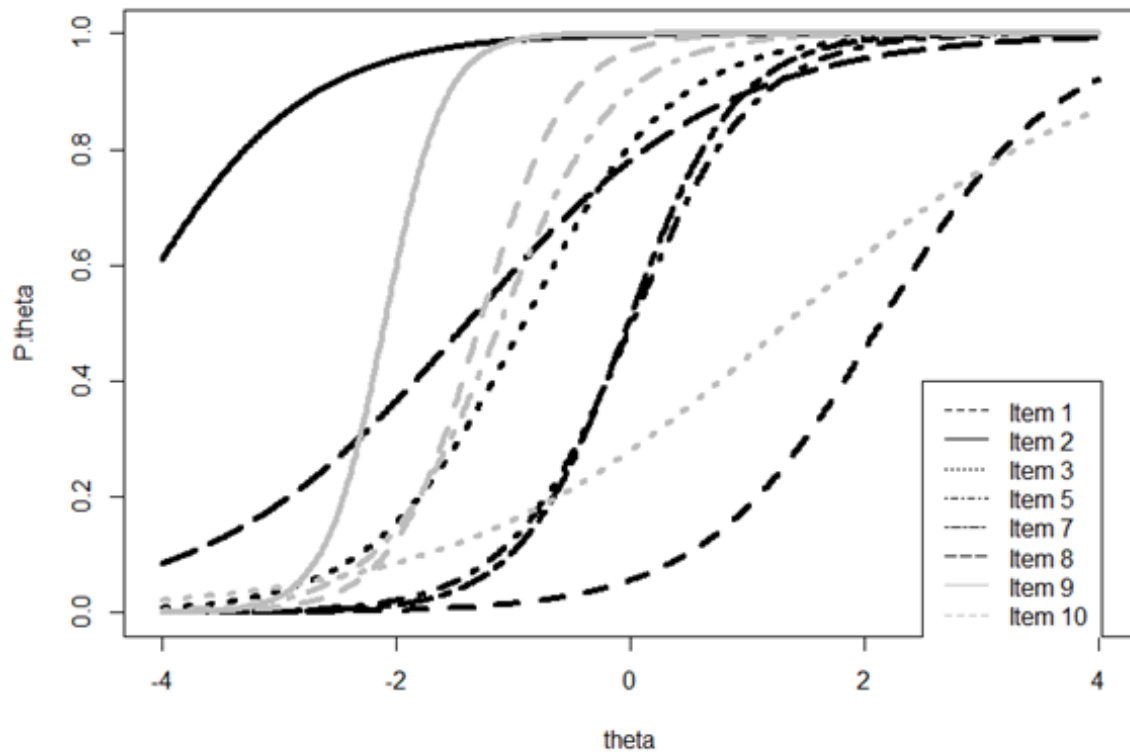
	Log-likelihood	AIC	BIC	ΔX^2	Δdf	p
1PL	-3376.009	6774.019	6823.631	-		
2PL	-3347.464	6734.929	6825.134	-57.09	9	<.001
3PL	-3346.594	6753.188	6888.496	-1.74	10	= .99

Based on IRT, 1PL, 2PL, and 3PL models were estimated and their fit indexes were compared (see Table 4). The 3PL model presented lower values for the log-likelihood, AIC, and BIC. However, the chi-square differences test was not statistically significant, supporting the simpler 2PL model. The difficulty (b) and discrimination (a) parameters for the 2PL model are in Table 5. Most items had negative or near-zero b parameters, indicating low difficulty, except for item 1, which was more difficult. Most items had discrimination values above 1.0, indicating high discrimination. Item Characteristics Curves (ICC) for the items are presented in Figure 1.

Table 5.

Item Parameters of LOSS-SF

	a	b
LOSS1	0.78	2.14
LOSS2	0.78	-4.34
LOSS3	0.92	-0.91
LOSS5	1.12	0.02
LOSS7	1.28	-0.02
LOSS8	0.54	-1.39
LOSS9	2.32	-2.10
LOSS10	1.60	-1.28
LOSS11	0.42	-1.34
LOSS12	1.18	-1.11

Figure 1.*Item Characteristic Curves of LOSS-SF*

IRT estimates the reliability of each item, showing at which level of trait the indicator is a better estimator of the latent factor. This information is indicated in the Item Information Curves, presented in Figure 2. The Test Information Curve is also presented in Figure 3.

Figure 2.

Item Information Curves of LOSS-SF

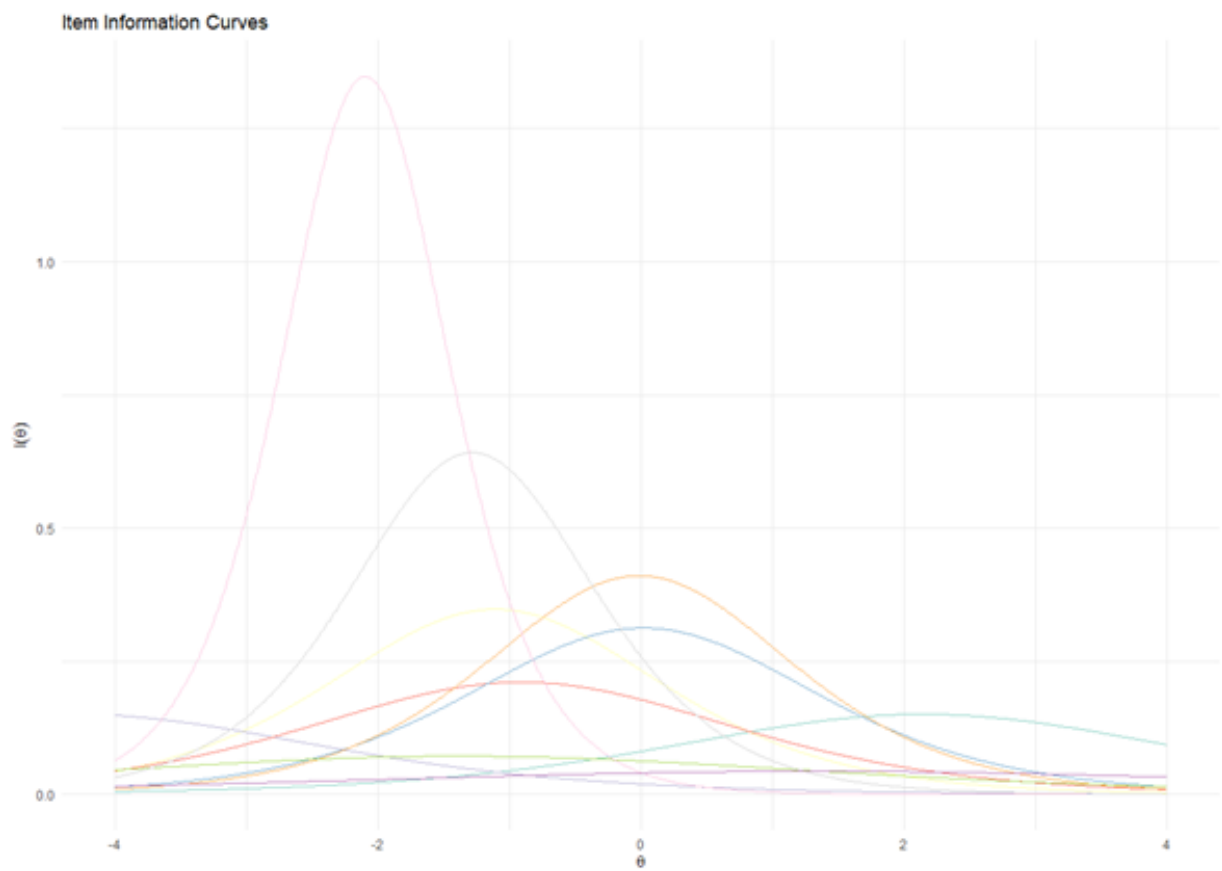
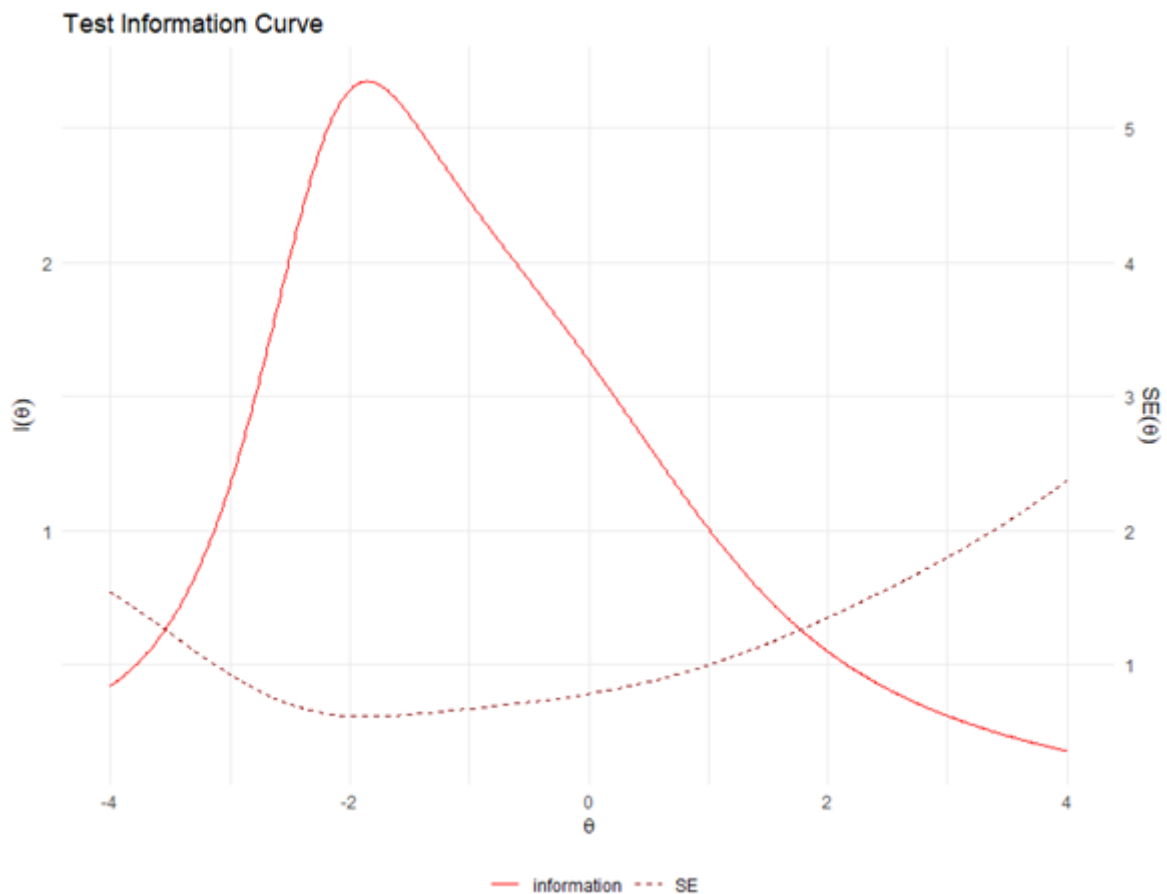


Figure 3.*Test Information Curve of LOSS-SF*

We conducted DIF analysis for gender. Table 6 shows χ^2 test results comparing Models 1 and 2, Models 2 and 3, and Models 1 and 3 for all items. Significant differences indicate uniform DIF, non-uniform DIF, and “total DIF effect”, respectively. Results in Table 6 indicate no differential item functioning, supporting the scale's gender non-bias.

Table 6.*Chi-Square Tests and McFadden's Pseudo R² Changes for DIF Detection in the LOSS-SF*

	Model 1 vs Model 2		Model 1 vs Model 3		Model 2 vs Model 3	
	<i>p</i> -value	<i>pseudoR</i> ² Δ	<i>p</i> -value	<i>pseudoR</i> ² Δ	<i>p</i> -value	<i>pseudoR</i> ² Δ
	χ^2 test	McFadden	χ^2 test	McFadden	χ^2 test	McFadden
LOSS1	.415	.001	.484	.002	.375	.001
LOSS2	.076	.014	.196	.015	.734	.001
LOSS3	.125	.003	.270	.003	.606	.000
LOSS5	.090	.003	.232	.003	.832	.000
LOSS7	.483	.001	.348	.002	.203	.002
LOSS8	.169	.002	.387	.002	.986	.000
LOSS9	.606	.001	.825	.002	.730	.001
LOSS10	.669	.000	.874	.000	.769	.000
LOSS11	.058	.004	.164	.004	.904	.000
LOSS12	.640	.000	.503	.002	.282	.002

Note. Model 1 considers the cumulative probability of the true response based on the latent trait. Model 2 includes the impact of the grouping variable (gender) on this likelihood (uniform DIF). Model 3 adds the interaction between gender and the trait (non-uniform DIF). Comparison between Models 1 and 2 tests uniform DIF. Comparison between Models 2 and 3 tests non-uniform DIF. Comparison between Models 1 and 3 tests total DIF effect. A *p*-value under .05 along with an increment of the pseudoR² McFadden above .13 indicates DIF (Zumbo, 1999).

3.1.4 Discussion

The current study aimed to validate the Spanish versions of the SIDAS, the SOSS-SF, and the LOSS-SF, by presenting the psychometric properties through the application of CFA and IRT. These three self-administered instruments are concise, which makes them suitable for online research and large epidemiological surveys. All three scales exhibited robust factor structures, good internal consistency, and evidence of gender invariance.

The first task was translating the scales for different cultures. A back-translation process with native speakers from Spain and Latin America ensured coherence and cultural equivalence, making the scales suitable for various Spanish-speaking contexts.

Since non-ideators scored zero on the SIDAS, validation was only carried out on the subsample of ideators. Among them, the scale showed good internal consistency. Likewise, the CFA conducted suggests a unifactorial structure equal to that proposed by van Spijker et al. (2014), which allows for simple assessments with a single global score of suicidal ideation.

An interesting finding was the low factor loading of SIDAS item 2 (controllability), despite its statistical significance. Similar results were found in validations conducted in Canada (Gauvin et al., 2022) and the UK (Harris et al., 2021) among adults with suicidal ideation, raising questions about the item's contribution to the assessment of this construct. Several factors could account for this observation. Firstly, being an inverse item, there are controversies surrounding its effects on the reliability of the measures (Suárez Álvarez et al., 2018). Furthermore, it has been noted that scales incorporating inverted items tend to exhibit smaller factor loadings, potentially influencing the overall factor structure (Kam, 2023). Secondly, the concept of controllability may be vague to participants (Gauvin et al., 2022).

Regarding psychometric properties of the SOSS-SF, the 16-item version showed favourable fit indices in a three-factor structure, consistent with Batterham et

al.'s (2013a) proposal. The overall scale and Isolation/Depression and Stigma subscales demonstrated robust reliability, similar to findings in the general Spanish population (Collado et al., 2023) and medical students in Puerto Rico (Hernández-Torres et al., 2021). However, the Glorification/Normalization subscale exhibited internal consistency levels near but not quite meeting acceptable thresholds. Similar findings were noted in validations across Germany (Ludwig et al., 2020b), Bangladesh (Arafat et al., 2021), and Jordan (Aldalaykeh et al., 2020).

In our results, a specific item ('dedicated') in the Glorification/Normalization subscale exhibited low factor loadings, despite contributing significantly to the construct. Cultural differences in understanding this adjective may explain the difficulty, as observed in other studies (Han et al., 2017a; Aldalaykeh et al., 2020; Fong et al., 2022; Gupta et al., 2023). For example, in Mexico (where most of the Latin American sample was drawn), death holds particular symbolic value, expressed through rituals and customs that integrate it as a natural part of the life cycle (Soria-Escalante & De la Fuerte-Herrera, 2020). Therefore, future research should focus on ensuring the proper comprehension and interpretation of this item by participants across different regions.

Regarding the LOSS-SF, items 4 and 6 were excluded from IRT analysis due to insignificant factor loadings. This resulted in a 10-item Spanish scale showing low difficulty and adequate discrimination levels. Consequently, the highest levels of reliability were found for participants with low levels of knowledge about suicide. Therefore, the scale would not allow us to discriminate between high levels of knowledge adequately. The only item that presented some difficulty was item 1 ("If the suicides had been evaluated by a psychiatrist, they would have been diagnosed with depression"). Likewise, all items were found to have homogeneous functioning, with no gender bias.

In the case of items 4 and 6 excluded, the failure in their functioning may be due to the ambiguity of the statements. On the one hand, item 4 stated that "there is a strong relationship between alcoholism and suicide". While excessive alcohol intake

can indeed elevate suicide risk, this association is nuanced by factors like gender and mental health conditions (Wilcox et al., 2004). However, some research suggests that it is not the consumption per se that could indicate this relationship, but rather the type of consumption, such as preference for distilled beverages or "binge drinking" (excessive consumption in a short time) (Landberg, 2008; Glasheen et al., 2015). Therefore, as it is a relationship conditioned by certain aspects, this phrase may seem confusing and simplistic.

Item 6 stated that "people who want to attempt suicide can change their mind quickly". Suicidal ideation and suicidal behaviour are often considered by the population as extreme manifestations of mental illness, with recovery rates perceived as less likely compared to other disorders, such as depression (Sheehan et al., 2017b). This notion of quickness and volatility in phrasing could be at odds with more entrenched conceptions in the population.

In sum, the Spanish 10-item LOSS-SF scale, as well as the SIDAS and SOSS-SF in their original versions, have proven to be reliable and valid tools for the assessment of suicidal ideation and attitudes towards suicide in the Spanish-speaking population. The exclusion of items 4 and 6 from the LOSS-SF has improved the accuracy of the instrument, ensuring that the measures more accurately reflect perceptions and behaviours related to suicide.

By identifying stigma and assessing the level of suicide literacy within a community, these scales provide valuable insights that can enhance suicide prevention programs, allowing for more effective and targeted interventions. Moreover, the early detection of suicidal ideation through tools like SIDAS is crucial for timely intervention and prevention, underscoring the importance of screening in improving overall suicide prevention strategies.

The present study has several limitations. Due to the cross-sectional design, we cannot assess the test-retest reliability and sensitivity to change in the scales. Also, the study sample is skewed towards adult women, the levels of clinical symptomatology are relatively low, and an education level higher than the

population. To enhance the generalizability of findings, future research should aim for a more diverse and representative sample.

Likewise, certain strengths stand out from the study. The availability of brief, self-administered scales enhance the efficiency of population screening and improves response rates. The SIDAS, specifically designed for online administration, enables the collection of detailed information on suicidal thoughts in population-based research, addressing a critical need. Additionally, clinicians can utilize this tool for rapid detection of suicidal risk. Moreover, culturally adapted tools for assessing stigma and suicide knowledge levels enable the creation of targeted programs for suicide prevention, early intervention, and mental health education.

The validation of the SIDAS, SOSS-SF, and LOSS-SF in different Spanish-speaking countries ensures an adequate cultural and linguistic adaptation of the scale, strengthening the validity and applicability of the results obtained in different contexts within the Spanish-speaking world. Additionally, employing statistical methods recommended for such scales enhances the reliability of measurements. Notably, this is the inaugural study to validate the SIDAS in Spanish, providing a concise measure for gathering information on individuals at risk of suicide. The LOSS-SF, SIDAS, and SOSS-SF each contribute unique perspectives on suicidal ideation and attitudes, which collectively offer a comprehensive view of the factors influencing suicide risk. Future research in Spanish-speaking populations will benefit from having these validated tools available, facilitating comparative analyses that can further refine prevention strategies and interventions.

Study 2

Levels and Predictors of Suicide Literacy and Suicide Stigma in Spanish-Speaking Individuals

This study has been published as: Pierantonelli, M., Mira, A., Zamora, Á., Desdentado, L., Diego-Pedro, R., González-Hernández, E., Bretón-López, J., García-Palacios, A., & Baños, R. M. (2024). Levels and Predictors of Suicide Literacy and Suicide Stigma in Spanish-Speaking Individuals. *Brain and behavior*, 14(11), e70125.

3.2.1 Background

According to the World Health Organization (WHO, 2021c), suicide is a significant public health issue. Globally, it ranks among the top twenty leading causes of mortality, and it is the second leading cause of death for adolescents and young adults. The latest official report by the Spanish National Statistics Institute (INE, 2022) states that the number of deaths by suicide is on the rise every year in Spain. In 2022, suicide remained the leading cause of unnatural death, with an increase of 5.1% over the previous year. Similarly, in Latin America, suicide rates ranged from 2.1 (Venezuela) to 18.8 (Uruguay) per 100,000 people in 2019 (Dattani et al., 2023). One of the major challenges facing suicide research is destigmatisation. Addressing this issue is of utmost importance to have the accurate data needed to improve understanding of suicidal behaviour and to develop effective preventive interventions (Silverman., 2016).

Suicide prevention is a significant mental health challenge worldwide (Gabilondo, 2020). The main barriers to suicide prevention include stigma, lack of information, and considering suicide a taboo subject (WHO, 2021a). Stigma toward suicide leads to increased symptoms of sadness, distress, and isolation, hindering help-seeking behaviour and impeding suicide prevention (American Psychiatric Association, 2021). Public stigma involves negative attitudes, beliefs, and stereotypes held by members of society toward, in this case, people who experience suicidal ideation or behaviour (Corrigan et al., 2005). They are often considered selfish, weak-willed, and unable to cope with problems (Carpiniello and Pinna, 2017). Additionally, they can elicit emotional responses characterized by anger and, more significantly, fear (Ludwig et al., 2020a). These negative perceptions significantly fuel self-stigma, fostering the internalization of societal misconceptions (Corrigan et al., 2005). Self-stigma was associated with decreased self-esteem and self-efficacy (Corrigan & Bink, 2016), and increased symptomatology (Livingston & Boyd, 2010). Evidence suggests that individuals with mental health problems who suffer discrimination and perceived stigma may be more prone to suicidal ideation. Studies such as those by Oexle et al. (2018) and (2017) have found that self-stigma mediates in this relationship in the short

and long term. Literacy about suicide has been identified as a factor that could not only mitigate the effects of stigma (Peel et al., 2017; Takahashi et al., 2023) but also increase help-seeking behaviours (Calear et al., 2014; Mok et al., 2021). The concept refers to public knowledge about this problem (i.e., causes, risk factors) (Jorm, 2000) and is closely related to educational level, gender, age, previous exposures to close experiences, and cultural context, among others (Batterham et al., 2013a). Likewise, it was found that peer support networks with higher literacy about suicide tend to encourage professional help-seeking rather than self-help (Cruwys et al., 2018).

While culturally diverse countries such as Australia (Chan et al., 2014), China (Han et al., 2017a), Japan (Nakamura et al., 2021), Bangladesh (Arafat et al., 2021), Nepal (Gupta et al., 2023), and Germany (Ludwig et al., 2021) have conducted studies to gauge levels of suicide stigma and literacy, such studies are notably scarce in Spanish-speaking samples (Hernández-Torres et al., 2021). However, recent validations of key scales to measure these variables are clear indicators of the growing interest in the topic both in Spain (Collado et al., 2023) and Latin America (Hernández-Torres et al., 2021; Baños-Chaparro et al., 2023). Understanding attitudes and social thoughts regarding suicide, along with knowledge of the subject, is crucial for developing evidence-based and culturally sensitive interventions aimed at promoting help-seeking behaviours when people struggle with suicidality (Calear et al., 2014; Batterham et al., 2022).

The aims of the present study were (1) to investigate levels and correlates of suicide stigma and suicide literacy in Spanish-speaking individuals from Spain and Latin America, comparing both regions; (2) to explore the relationship of sociodemographic and clinical variables with these attitudes and knowledge about suicide, by identifying factors that may predict them.

3.2.2 Method

Participants

678 participants completed an online survey. Sensitivity analyses indicate that the sample size is large enough to detect small effect sizes in the regression models we have run in the study (R^2 = between .0268 and .0316, specifically). These sensitivity analyses assume a statistical power of 95% and an alpha significance level of .05.

Instruments

Ad hoc items were developed to collect sociodemographic information about the sample: gender, age, region, and educational level. The degree of endorsement of religious/spiritual beliefs was determined using a 5-point Likert scale (*not at all, slightly, moderately, very, extremely*). Likewise, participants were asked about experiences of suicide in their environment and knowledge about helpful resources in case of suicidal risk.

Suicide stigma was assessed with the Stigma of Suicide Scale - Short Form (SOSS-SF; Batterham et al., 2013b), which is a 16-item measure using adjectives that prototypically describe a person who commits suicide. The assessment identifies three factors: Stigma, Isolation/ Depression, and Glorification/ Normalization. The scale was validated in Spanish (Collado et al., 2023) and Latino populations (Hernández-Torres et al., 2021; Baños-Chaparro et al., 2023) with good psychometric properties. Regarding the reliability for the SOSS-SF dimensions, it was adequate for stigma ($\alpha=.86$; $\omega=.84$) and isolation/depression ($\alpha=.76$; $\omega=.81$), but was questionable for glorification/ normalization ($\alpha=.64$; $\omega=.68$)

The Literacy of Suicide Scale - Short Form (LOSS-SF; Caele et al., 2022) addresses the levels of knowledge about suicide. It contains 12 items organized into four domains: (1) signs and symptoms, (2) causes or nature of suicide, (3) risk factors for suicidal behaviour, and (4) treatment and prevention. The total score can be determined by adding up the correct answers, yielding a range of 0 to 12. The original

version presented adequate psychometric properties as well as the validation in Spanish and Latino individuals (Collado et al., 2023; Baños-Chaparro et al., 2023). In this study, split-half reliability, corrected by the Spearman-Brown formula, was $\rho = .61$.

An independent back-translation of the SOSS and LOSS from English to Spanish was conducted. This involved a native Spanish-speaking translator well-versed in the subject and a bilingual speaker without prior knowledge in this field. No major differences were found between the two English versions. Team members in Mexico and Spain reviewed items for cultural accuracy. Furthermore, a validation process of the measurements was executed (Zamora et al., 2021)

As mentioned, the presence of clinical symptomatology was also evaluated: (1) PHQ-9 reflects the DSM-IV diagnostic criteria for depression in the last two weeks. The Spanish version (Familiar et al., 2015; Diez-Quevedo et al., 2001) showed adequate sensitivity and specificity; (2) GAD-7 to assess the manifestation of anxiety in the last two weeks. The Spanish version showed excellent internal consistency (García-Campayo et al., 2010); (3) SIDAS assesses the severity of suicidal ideation in the last month. The measure has shown excellent psychometric properties (van Spijker et al., 2014).

Procedure

Using a non-random sampling method, participants from both regions were recruited between 2021 and 2022. An announcement of the study was disseminated from different Spanish Universities (University of Valencia, University Jaume I, and Zaragoza University) and from the University of the Americas in Mexico. Flyers and social media were used to invite participants to complete an anonymous online survey. To be included, participants had to be over 18 years old and be fluent in Spanish. This research received approval from the Research Ethics Committee of the Community of Aragon.

Data Analysis

Data management and statistical analyses were performed with SPSS 27 and R 4.2.2. First, descriptive statistics were conducted for sociodemographic and study variables for both the total sample and region-based subsamples. In addition, we analysed differences in these variables between region-based subsamples with chi-square tests for categorical variables and independent samples t-test for numeric variables. Moreover, a detailed analysis of the frequency with which participants agreed or strongly agreed with each item of the SOSS-SF was performed. Similarly, analysis on the number of correct responses in the LOSS-SF was carried out. Pearson correlation analyses were used to find out the relationships between stigma and other variables of interest with the 'apaTables' package (Stanley., 2021). Finally, three sets of hierarchical linear regression analyses were computed to investigate the role of suicide literacy dimensions (i.e., risk factors, symptoms, causes, and treatment), sociodemographics (i.e., age, gender-reference category: man, religion, region-reference category: Spain, help-reference category: "yes", and experience with suicide-reference category: no experience), and clinical (i.e., depression, anxiety, and suicide ideation) variables in explaining the three dimensions of suicide stigma (i.e., stigma, glorification, and depression).

Moreover, a hierarchical Poisson regression analysis was performed to investigate the role of sociodemographics (i.e., age, gender, level of education-reference category: basic studies, religion, region, help, and experience with suicide) and clinical (i.e., depression, anxiety, and suicide ideation) variables in explaining the suicide literacy. Poisson regression modelling was chosen because it is the most appropriate method for outcome variables that are counted (Cameron & Trivedi, 1998), which is the case for the LOSS total score. All regression analyses were computed using the 'stats' package (R Core Team, 2022). Quantitative predictors were mean-centred. The alpha level was set at .05 for all statistical analyses computed. Missing data were handled with listwise deletion.

The code behind this analysis has been made publicly available at OSF and can be accessed at <https://osf.io/ketrn/>.

3.2.3 Results

Sample characteristics

Descriptive sample information is provided in Table 1. A total of 78.9% (n=534) identified themselves as female; the mean age was 28.10 years (SD=10.97; range=18-77). Regarding the region, 412 were from Spain (60.9%) and 264 from Latin America (39.1%). Most Latin American participants were from Mexico (90.5%) and the rest (9.5%) were from other countries. In total, half of the sample (51.3%) had completed university studies at the highest level of education, and the majority (62.2%) were employed. 51.8% were not aware of the resources available to seek help in case of problems related to suicide. Moreover, 56.6% of the participants reported having had an experience related to suicide with someone in their environment. Of these, 42.7% reported that the experience ended with the person's death.

No indicators of depressive symptomatology were found in the sample according to the mean of Patient Health Questionnaire-9 (PHQ-9; Diez-Quevedo et al., 2001). Furthermore, the mean score on the 7-item Generalized Anxiety Disorder-7 (GAD-7; García-Campayo et al., 2010) indicated a minimal level of anxiety severity. The sample showed low suicidal ideation according to the Suicidal Ideation Attributes Scale (SIDAS; Van Spijker et al., 2014).

Significant differences were found between the Spaniards and Latin Americans in some variables. Latin American participants presented significantly higher levels of anxious symptomatology and religious/spiritual beliefs. Likewise, this group indicated significantly more experiences in the environment related to suicide. Significant differences were also found in terms of the educational level.

Table 1.*Sociodemographic and Clinical Characteristics*

	Total	Spain (N=412)	Latin America (N=264)	X² or t
Gender (n,%)				6.37
Women	534 (78.9)	326 (79.1)	208 (78.8)	
Men	128 (18.9)	76 (18.4)	51 (19.3)	
Non-binary	7 (1)	7 (1.7)	0	
Other	8 (1.2)	3(0.7)	5 (1.9)	
Age (years) (M,SD)	28.10 (10.97)	28.54 (10.43)	27.41(11.82)	1.24
Education (n,%)				118.63***
Basic studies	133 (19.6)	126 (30.6)	7 (2.7)	
Vocational training/ High school	196 (29)	69 (16.8)	127 (48.1)	
University studies	347 (51.3)	216 (52.6)	130 (49.2)	
Occupation (n,%)				0.02
Employed	331 (62.2)	256 (62.4)	74 (61.2)	
Unemployed	201 (37.8)	154 (37.6)	47 (38.8)	
Religious belief (M,SD)	2.29 (1.28)	1.87 (1.10)	2.94 (1.28)	-11.24***
Information on sources of aid (n,%)				1.51
Yes	326 (48.2)	207 (50.2)	119 (45.1)	
No	351 (51.8)	205 (49.8)	145 (54.9)	
Experience with suicide in the environment (n,%)				6.14*
No	294 (44.14)	192 (47.76)	101 (38.70)	

Yes, only suicide attempt	213 (31.98)	116 (28.86)	96 (36.78)	
Yes, death by suicide	159 (23.87)	94 (23.38)	64 (24.52)	
Relationship closeness (n,%)				4.70
Very close	154 (41.4)	84 (40.2)	70 (43.2)	
Close	86 (23.1)	57 (27.3)	29 (17.9)	
Not very close	132 (35.5)	68 (32.5)	63 (38.9)	
Depression - PHQ9 (M, SD)	7.13 (5.65)	7.37 (5.67)	6.90 (5.64)	0.78
Anxiety - GAD7 (M, SD)	4.87 (4.37)	4.02 (3.87)	6.05 (4.77)	-5.42**
Suicidal ideation - SIDAS (M, SD)	11.78 (9.51)	10.58 (8.36)	13.47 (10.71)	-1.83

Note. * $p < .05$. ** $p < .01$. *** $p < .001$

Levels of suicide stigma and suicide literacy

Table 2 shows the means, standard deviations, and the contrast of means by region in both the SOSS-SF subscales and LOSS-SF.

Concerning the SOSS-SF, the results showed that the subscales with the highest scores were isolation/depression and glorification/normalization. In particular, the Latin American group scored significantly higher than Spaniards on the stigma and glorification/normalization subscales.

Table 2.*Suicide Stigma and Literacy.*

	Total	Spain	Latin America	t test
Measure	Mean (SD)	Mean (SD)	Mean (SD)	t
SOSS-SF				
Isolation/Depression	3.53(.83)	3.51(.80)	3.57(.89)	-.96
Glorification/Normalization	2.69(.69)	2.63(.70)	2.80(.65)	-3.14**
Stigma	1.7(.63)	1.65(.57)	1.76(.69)	-2.13*
LOSS-SF	6.93(2.07)	7.12(1.98)	6.67(2.18)	2.66**
Causes/nature	2.24(1.1)	2.39(1)	2(1.1)	4.73***
Risk factors	1.4(.87)	1.35(.82)	1.51(.92)	-2.31*
Treatment/prevention	1.91(.32)	1.93(.29)	1.88(.36)	1.69
Signs	1.38(.86)	1.45(.92)	1.28(.9)	2.49*

Note. * $p < .05$. ** $p < .01$. *** $p < .001$

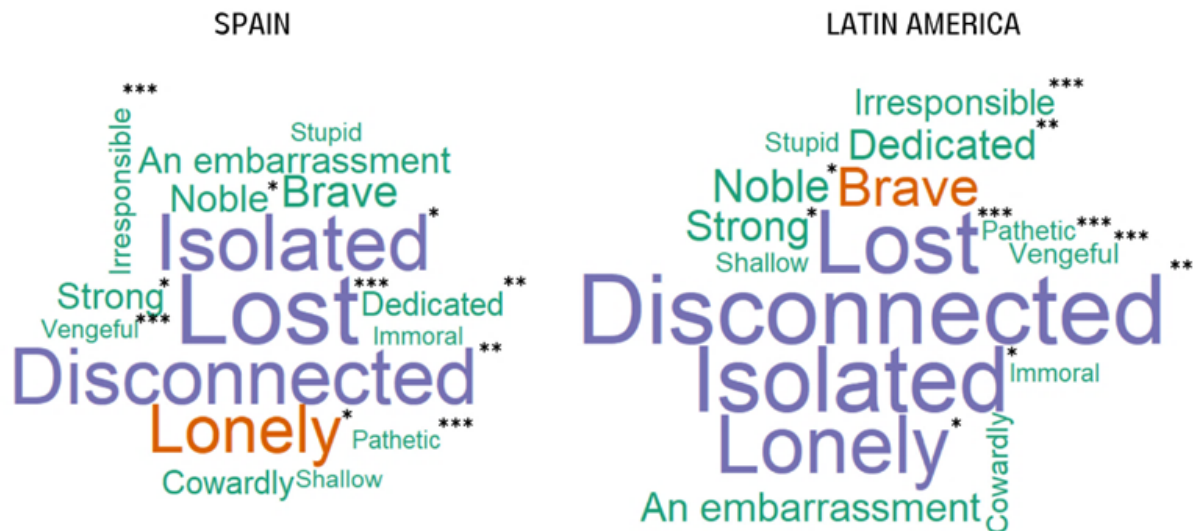
Table 3 represents the percentage of agreement with each SOSS-SF item. The adjectives with the highest agreement were those of the isolation/depression subscale. Specifically, more than half of the participants rated people who commit suicide as “lost”, “disconnected”, and “isolated”. Additionally, the Latin American group scored significantly higher on “pathetic”, “vengeful”, “irresponsible”, “isolated”, “disconnected”, “noble”, “strong”, and “dedicated”. Conversely, they showed lower scores in “lost” compared to the Spanish sample (see Figure 1).

Table 3.*Percentage of Agreement with SOSS-SF Items*

Item	Agree/strongly agree, %
Lost	68.14%
Disconnected	59.73%
Isolated	57.82%
Lonely	46.61%
Brave	23.45%
Noble	15.93%
Strong	14.16%
An embarrassment	13.27%
Dedicated	11.65%
Cowardly	7.67%
Irresponsible	7.37%
Vengeful	2.36%
Shallow	1.62%
Pathetic	1.33%
Stupid	1.33%
Immoral	1.18%

Figure 1.

Most Agreed-to Adjectives and Significant Differences Between Regions in SOSS-SF



Note. * $p < .05$. ** $p < .01$. *** $p < .001$

Regarding the LOSS-SF, Table 2 shows that the scores in the causes/nature subscale were markedly high, while in the rest of the subscales, the scores were close to half of the maximum score. For the Spaniard group, significantly higher scores were found on the total scale and the subscales of causes/nature and symptoms, while Latin American participants scored significantly higher on the risk factors subscale. Table 4 shows the specific percentage of correct answers for each statement.

Table 4.*Correct Responses to Items from the LOSS-SF*

Item	Total (n=678) %	Spain (n=412) %	Latin America (n=262) %
Causes/nature			
Very few people have thoughts about suicide (F)	80.9%	83.3%	75.6%
If assessed by a psychiatrist, everyone who suicides would be diagnosed as depressed (F)	18.5%	17.1%	19.1%
A suicidal person will always be suicidal and entertain thoughts of suicide (F)	73.8%	78.2%	65.6%
Talking about suicide always increases the risk of suicide (F)	50.4%	56.8%	40.1%
Risk factors			
Most people who suicide are psychotic (F)	67.1%	71.6%	59.2%
Men are more likely to suicide than women (T)	37%	29.6%	47.7%
There is a strong relationship between alcoholism and suicide (T)	36.4%	31.3%	43.9%
Signs			
Not all people who attempt suicide plan their attempt in advance (T)	66.9%	68.9%	61.8%
People who talk about suicide rarely kill themselves (F)	49.8%	55.8%	39.3%
People who want to attempt suicide can change their mind quickly. (T)	21.6%	18%	26.7%
Treatment/prevention			
People who have thoughts about suicide should not tell others about it (F)	95.1%	95.1%	93.1%
Seeing a psychiatrist or psychologist can help prevent someone from suicide (T)	95.7%	94.7%	95%

Note. F=False, T=True

Relationship between sociodemographic and clinical variables with suicide stigma and suicide literacy

Pearson's correlation coefficients between sociodemographics, clinical variables, suicide stigma, and literacy are presented in Table 5.

Age correlated significantly and negatively with the total and all subscales of the LOSS scale. In turn, religious/spiritual beliefs exhibited a significant positive correlation with stigma subscale.

Conversely, these beliefs negatively correlated with the overall total of the LOSS scale and its subscales, except for the risk factors subscale. The stigma subscale showed consistent negative correlations with all aspects of suicide literacy, emphasizing the link between stigma and decreased knowledge of suicide.

The correlation analysis revealed significant relationships between the clinical variables and stigma and their associations with literacy subscales.

Depressive symptoms were positively correlated with the glorification subscale but negatively correlated with overall suicide stigma, indicating a nuanced relationship. Anxiety symptoms were positively associated with various stigma aspects, including glorification, depression, and overall stigma. Suicidal ideation also showed positive correlations with the stigma subscale, depression subscale, and stigma overall, suggesting that higher levels of suicidal ideation were associated with greater endorsement of suicide stigma.

Finally, all clinical variables positively correlated with literacy overall and several subscales.

Table 5.*Bivariate Correlations Between the Suicide Stigma, Suicide Literacy, and Clinical Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Age												
2. Religious/Spiritual Beliefs	.08*											
3. SOSS-Estigma	.06	.16**										
4. SOSS-Glorification	-.06	.03	.07									
5. SOSS-Depression	-.01	.03	.31**	-.02								
6. LOSS-Risk factor	-.18**	-.03	-.10**	.00	.07							
7. LOSS-Symptoms	-.12**	-.09*	-.08*	-.02	.03	.18**						
8. LOSS-Causes	-.26**	-.17**	-.23**	-.01	.00	.25**	.28**					
9. LOSS-Treatment	-.11**	-.13**	-.21**	-.06	.03	.12**	.17**	.24**				
10. LOSS-Total score	-.27**	-.16**	-.23**	-.02	.05	.64**	.66**	.77**	.39**			
11. PHQ-9	-.09*	-.15**	-.08*	.09*	.05	.09*	.16**	.03	-.01	.12**		
12. GAD-7	-.14**	.04	.02	.11**	.12**	.05	.10*	.02	-.09*	.06	.60**	
13. SIDAS	-.13	-.07	.17*	.10	.18*	.17*	.14	-.11	-.21**	.05	.52**	.35**

Note. * $p < .05$. ** $p < .01$.

Stigma of Suicide Scale (SOSS) dimensions regressed on suicide literacy, sociodemographic, and clinical variables.

Regarding the hierarchical linear regression models to explain the SOSS stigma subscale (see Table 6), the model that included the suicide literacy dimensions as explanatory variables was significant (Model 1: $F(4,533)=9.03$, $p<.001$), explaining 5.87% of the variance. Specifically, lower scores on the causes and treatment dimensions of the LOSS scale were significantly related to higher scores on suicide stigma. After simultaneously adding the sociodemographic variables, the resulting model (Model 2: $F(11,526)=6.46$, $p<.001$) produced a significant increase in the explained variance ($\Delta R^2=.056$, $F(7)=4.75$, $p<.001$). In addition to the causes and treatment dimensions of the LOSS scale, gender, religion, and help were also significant predictors of suicide stigma. Specifically, women showed lower levels of suicide stigma than men, whereas those with stronger religious beliefs and those who reported a lack of knowledge about how to find help showed higher levels of suicide stigma. When simultaneously adding the clinical variables (i.e., anxiety, depression, and suicide ideation), the resulting model (Model 3: $F(14,523)=5.44$, $p<.001$) did not produce a significant increase in the explained variance of stigma compared to Model 2 ($\Delta R^2=.008$, $F(3)=1.61$, $p<.180$). The only new significant predictor was depression, demonstrating greater depressive symptoms related to lower scores on suicide stigma.

Table 6.

Linear Regression Results Using SOSS Stigma Subscale as the Criterion Variable.

Model	Predictors	<i>b</i> (SE)	β	<i>t</i>	Fit (R^2, 95% CI)	$R^2_{adjusted}$
1.1	(Intercept)	1.70(0.03)	-	67.27**	.063** [.02,.10]	.056
	LOSS-Risk factors	-0.04(0.03)	-.06	-1.30		
	LOSS-Symptoms	-0.01(0.03)	-.01	-0.25		
	LOSS-Causes	-0.10(0.03)	-.18	-3.91**		
	LOSS-Treatment	-0.23(0.09)	-.11	-2.63**		
1.2	(Intercept)	1.84(0.07)	-.04	26.00***	.119** [.06,.15]	.101
	LOSS-Risk factors	-0.03(0.03)	-.01	-0.95		
	LOSS-Symptoms	-0.01(0.03)	-.18	-0.28		
	LOSS-Causes	-0.1(0.03)	-.11	-3.84***		
	LOSS-Treatment	-0.23(0.09)	-.00	-2.60**		
	Age	0.00(0.00)	-.16	-0.01		
	Gender (women)	-0.25(0.06)	.14	-3.88***		

	Religion/spiritual beliefs	0.07(0.02)	-.05	3.11**		
	Region (Latin America)	-0.06(0.06)	.13	-1.11		
	Help(No)	0.16(0.05)	.01	3.25**		
	Exp. suicide (attempt)	0.01(0.06)	.01	0.15		
	Exp. suicide (death)	0.01(0.07)	-.04	0.16		
1.3	(Intercept)	1.85(0.07)	-	25.60***	.127** [.06,.16]	.104
	LOSS-Risk factors	-0.03(0.03)	-.04	-0.92		
	LOSS-Symptoms	0.00(0.03)	-.01	-0.14		
	LOSS-Causes	-0.1(0.03)	-.19	-4.01***		
	LOSS-Treatment	-0.22(0.09)	-.10	-2.43*		
	Age	0.00(0.00)	.00	0.09		
	Gender (women)	-0.25(0.06)	-.16	-3.94***		
	Religion/spiritual beliefs	0.06(0.02)	.13	2.69**		
	Region (Latin America)	-0.09(0.06)	-.07	-1.49		
	Help (No)	0.16(0.05)	.13	3.13**		
	Exp. suicide (attempt)	0.01(0.06)	.01	0.23		

Exp. suicide (death)	0.02(0.07)	.02	0.33
PHQ-9	-0.01(0.01)	-.13	-2.15*
GAD-7	0.01(0.01)	.08	1.52
SIDAS	0.00(0.00)	.04	0.77

Note. *b* unstandardized regression weights. *SE* standard error. *B* standardized regression weights. * $p < .05$. ** $p < .01$.

Concerning the hierarchical linear regression models to explain the suicide glorification subscale (see Table 7), the model that included the suicide literacy dimensions as explanatory variables was not significant (Model 1: $F(4,533)=1.43$, $p=.223$), explaining 1.01% of the variance. The only significant predictor was the treatment dimension of the LOSS scale, with lower scores related to higher scores on glorification. After simultaneously adding the sociodemographic variables, the resulting model was marginally significant (Model 2: $F(11,526)=1.66$, $p=.078$) and produced a marginal increase in the explained variance ($\Delta R^2=.030$, $F(7)=5.47$, $p=.087$). In addition to the treatment dimension of the LOSS scale, the region was also a significant predictor of suicide glorification; thus, Latin Americans reported greater glorification than Spaniards. Finally, when simultaneously adding the clinical variables, the resulting model was still marginally significant (Model 3: $F(14,523)=1.57$, $p=.085$) and did not contribute significantly to explaining the variance of glorification compared to Model 2 ($\Delta R^2=.006$, $F(3)=1.56$, $p=.311$). None of the clinical variables were statistically significant.

Table 7.

Linear Regression Results Using SOSS Glorification Subscale as the Criterion.

Model	Predictors	<i>b</i> (SE)	β	<i>t</i>	Fit (R^2, 95% CI)	$R^2_{adjusted}$
2.1	(Intercept)	2.7(0.03)	-	94.25***	.004 [.00,.01]	.003
	LOSS-Risk factors	-0.03(0.03)	-.03	-0.76		
	LOSS-Symptoms	0.03(0.03)	.04	0.98		
	LOSS-Causes	0.00(0.03)	.01	0.15		
	LOSS-Treatment	-0.21(0.10)	-.09	-2.09*		
2.2	(Intercept)	2.67(0.08)	-	32.76***	.034 [.00,.05]	.013
	LOSS-Risk factors	-0.05(0.03)	-.06	-1.34		
	LOSS-Symptoms	0.03(0.04)	.04	0.90		
	LOSS-Causes	0.01(0.03)	.01	0.23		
	LOSS-Treatment	-0.21(0.10)	-.09	-2.04*		
	Age	0.00(0.00)	-.07	-1.62		

	Gender (women)	-0.03(0.07)	-.02	-0.44		
	Religion/spiritual beliefs	-0.03(0.02)	-.06	-1.17		
	Region (Latin America)	0.16(0.07)	.12	2.40*		
	Help (No)	-0.05(0.06)	-.04	-0.94		
	Exp. suicide (attempt)	0.07(0.07)	.05	1.10		
	Exp. suicide (death)	-0.01(0.08)	-.01	-0.16		
2.3	(Intercept)	2.70(0.08)	-	32.31***	.040 [.00,.05]	.015
	LOSS-Risk factors	-0.05(0.03)	-.06	-1.36		
	LOSS-Symptoms	0.02(0.04)	.03	0.64		
	LOSS-Causes	0.01(0.03)	.01	0.24		
	LOSS-Treatment	-0.19(0.10)	-.08	-1.82		
	Age	0.00(0.00)	-.07	-1.49		
	Gender (women)	-0.04(0.07)	-.02	-0.51		
	Religion/spiritual beliefs	-0.02(0.02)	-.05	-0.93		
	Region (Latin America)	0.14(0.07)	.10	2.05*		
	Help (No)	-0.06(0.06)	-.04	-0.99		

Exp. suicide (attempt)	0.05(0.07)	.03	0.71
Exp. suicide (death)	-0.03(0.08)	-.02	-0.46
PHQ-9	0.01(0.01)	.04	0.64
GAD-7	0.01(0.01)	.05	0.88
SIDAS	0.00(0.01)	.01	0.09

Note. *b* unstandardized regression weights. *SE* standard error. *B* standardized regression weights. * $p < .05$. ** $p < .01$

Regarding the hierarchical linear regression models to explain the depression subscale (see Table 8), the model that included the suicide literacy dimensions as explanatory variables was not significant (Model 1: $F(4,533)=1.59$, $p=.176$), explaining 1.18% of the variance. None of the suicide literacy dimensions reached statistical significance. After simultaneously adding the sociodemographic variables, the resulting model (Model 2: $F(11,526)=0.83$, $p=.609$) did not produce a significant increase in the explained variance ($\Delta R^2=.005$, $F(7)=0.041$, $p=.898$), and none of the predictors reached statistical significance. When simultaneously adding the clinical variables, the resulting model was not significant (Model 3: $F(14,523)=1.21$, $p=.261$), but we found a marginally significant increase in the explained variance of stigma compared to Model 2 ($\Delta R^2=.014$, $F(3)=5.17$, $p=.052$). Anxious symptomatology was the only significant predictor, with higher scores on GAD-7 related to higher scores on the SOSS depression subscale.

No severe violations of assumptions of linearity, normality of residuals, and homogeneity of residuals variance were detected in residuals vs. fitted plots, Q-Q plots, or scale-location plots, respectively. In addition, variance inflation factors did not indicate concerns about multicollinearity, as the highest value found was 2.34.

Table 8.

Linear Regression Results Using SOSS Depression Subscale as the Criterion Variable.

Model	Predictors	<i>b</i> (SE)	β	<i>t</i>	Fit (R^2, 95% CI)	$R^2_{adjusted}$
3.1	(Intercept)	3.54(0.04)	-	100.46***	.012 [.00,.03]	.004
	LOSS-Risk factors	0.06(0.04)	.07	1.50		
	LOSS-Symptoms	0.02(0.04)	.02	0.39		
	LOSS-Causes	-0.06(0.04)	-.08	-1.73		
	LOSS-Treatment	0.18(0.12)	.06	1.45		
3.2	(Intercept)	3.57(0.10)	-	35.40***	.017 [.00,.02]	.000
	LOSS-Risk factors	0.07(0.04)	.07	1.61		
	LOSS-Symptoms	0.01(0.04)	.01	0.30		
	LOSS-Causes	-0.06(0.04)	-.08	-1.67		
	LOSS-Treatment	0.18(0.13)	.06	1.42		
	Age	0.00(0.00)	.00	0.09		
	Gender (women)	-0.09(0.09)	-.04	-0.98		
	Religion/spiritual beliefs	0.02(0.03)	.03	0.64		
	Region (Latin America)	-0.03(0.08)	-.02	-0.40		

	Help (No)	0.07(0.07)	.04	0.99		
	Exp. suicide (attempt)	0.05(0.08)	.03	0.65		
	Exp. suicide (death)	-0.01(0.09)	-.01	-0.13		
3.3	(Intercept)	3.64(0.10)	-	35.30***	.031 [.00,.04]	.005
	LOSS-Risk factors	0.07(0.04)	.08	1.66		
	LOSS-Symptoms	0.01(0.04)	.01	0.11		
	LOSS-Causes	-0.07(0.04)	-.09	-1.86		
	LOSS-Treatment	0.22(0.13)	.08	1.72		
	Age	0.00(0.00)	.02	0.37		
	Gender (women)	-0.10(0.09)	-.05	-1.13		
	Religion/spiritual beliefs	0.02(0.03)	.03	0.57		
	Region (Latin America)	-0.09(0.08)	-.06	-1.09		
	Help (No)	0.05(0.07)	.03	0.75		
	Exp. suicide (attempt)	0.02(0.08)	.01	0.26		
	Exp. suicide (death)	-0.03(0.09)	-.02	-0.36		
	PHQ-9	-0.01(0.01)	-.06	-0.95		
	GAD-7	0.03(0.01)	.15	2.66**		
	SIDAS	0.00(0.010)	.01	0.23		

Note. *b* unstandardized regression weights. *SE* standard error. β standardized regression weights. * $p < .05$. ** $p < .01$.

Suicide literacy regressed on sociodemographic and clinical variables.

Regarding the hierarchical Poisson models to explain suicide literacy (total score) (see Table 9), the model that included sociodemographic characteristics as explanatory variables was significant (Model = 4.1: $\chi^2(9)=29.26$, $p=.001$), explaining 8.44% of the variance. Religion/spiritual beliefs were the only significant predictor in this model, with stronger beliefs being associated with lower suicide literacy. After simultaneously adding the clinical variables, the resulting model (Model 2: $\chi^2(12)=30.54$, $p=.002$) did not produce a significant increase in the explained variance ($\Delta R^2=.004$, $\Delta\chi^2=1.28$, $p=.733$). None of the clinical predictors were statistically significant. The Q-Q plots did not suggest the violation of the normality of residuals.

Table 9.*Poisson Regression Results Using LOSS Total Score as the Criterion Variable.*

Model	Predictors	<i>b</i> (<i>SE</i>)	β	<i>z</i>	Fit (<i>R</i> ²)
4.1		1.96(0.06)	-	34.97***	.084
	Age	-0.01(0)	-.04	-4.23***	
	Gender (women)	-0.05(0.04)	-.01	-1.12	
	Education (Vocational training)	0(0.05)	.00	-0.04	
	Education (University)	0.05(0.05)	.01	1.18	
	Religion/spiritual beliefs	-0.03(0.01)	-.02	-1.97*	
	Region (Latin America)	-0.04(0.04)	-.01	-1.03	
	Help (No)	-0.01(0.03)	.00	-0.45	
	Exp. suicide (attempt)	0.04(0.04)	.01	0.98	
	Exp. suicide (death)	0.02(0.04)	.00	0.51	
4.2	(Intercept)	1.97(0.06)	-	34.68***	.088
	Age	-0.01(0)	-.04	-4.12***	
	Gender (women)	-0.05(0.04)	-.01	-1.17	
	Education (Vocational training)	0(0.05)	.00	-0.06	

Education (University)	0.06(0.05)	.01	1.21
Religion/spiritual beliefs	-0.03(0.01)	-.02	-1.87
Region (Latin America)	-0.05(0.04)	-.01	-1.12
Help (No)	-0.02(0.03)	.00	-0.55
Exp. suicide (attempt)	0.03(0.04)	.01	0.78
Exp. suicide (death)	0.01(0.04)	.00	0.35
PHQ-9	0(0)	.00	0.34
GAD-7	0(0)	.01	0.75
SIDAS	0(0)	-.01	-0.49

Note. *b* unstandardized regression weights. *SE* standard error. β standardized regression weights. * $p < .05$. ** $p < .01$.

3.2.4 Discussion

The present study aimed to examine the levels and correlates of suicide stigma and suicide literacy in Spanish-speaking people, an understudied phenomenon in this population. Firstly, results showed the presence of stigmatization, a fact that is in line with previous research collected by Carpiniello and Pina (2017), which demonstrated the presence of these negative attitudes in a diversity of sociocultural environments. Mainly, a predominance of the conception of suicide as a typical act of people with traits related to isolation and depression was observed; the most prevalent adjectives were “lost”, “disconnected” and “isolated”. This is not surprising because feelings of isolation and loneliness are known risk factors for suicide, whereas feelings of connectedness with family and community are known to be protective (Centers for Disease Control and Prevention Suicide Prevention, 2022). These results are in line with the work of Batterham et al. (2019) in Australia, Han et al. (2017) in China, Al-Shannaq and Aldalaykeh (2021) in Jordan, and Nakamura et al. (2021) in Japan.

Regarding regions, the Latin American (vs. the Spaniard) group showed more stigmatizing attitudes and scored significantly higher on the stigma and glorification/normalization subscales. Notably, participants from this group associated individuals who die by suicide with descriptors like “noble” and “strong.” This normalization of suicide has been linked with a decline in help-seeking behaviours and an elevation in suicidality (Oexle et al., 2022b). In suicide literacy programs, it is important to demystify the act of suicide, reduce its glorification, and facilitate coping strategies and alternative options.

In addition, it is an interesting result since differences in culture and religion could explain these positive connotations of suicide. Notably, most of the participants from Latin America came from Puebla in Mexico, who share a spiritual understanding of death accompanied by rituals and a strong religious tendency toward Catholicism (Gutierrez et al., 2020). This would also explain the difference in religious beliefs between the samples. Likewise, this study revealed that participants from Latin America exhibited significantly more anxiety symptoms and experiences related to

suicide in their environment. These findings suggest a possible connection to the mental health access gap in the region, resulting in a lack of adequate care for those in need (Kohn et al., 2018).

The overall score of participants on the LOSS-SF suggested a moderate level of suicide literacy. Specifically, the scores in the causes/nature subscale were markedly high, while in the rest of the subscales, the scores were close to half of the maximum. Likewise, the results found in this sample are similar to the means reported in Japan (Nakamura et al., 2021) or Germany (Ludwig et al., 2021). On the contrary, they indicate lower levels of literacy compared to the Australian sample (Batterham et al., 2013a), but better results than those replicated in China (Han et al., 2017a).

Overall, the Latin American population presented significantly lower levels of suicide literacy. Therefore, the observed differences between regions in terms of suicide knowledge may be explained by differences in the education about mental health, specifically in the causes of suicide, its treatment, and the risk factors. This might help to design the specific components that interventions against stigma must have, depending on where they will be implemented.

Furthermore, the present study identified associations between age and literacy level. The lowest levels of knowledge were found among those with higher ages. It could be explained by the greater access to information that younger people have. Moreover, our findings showed that stronger religious/spiritual beliefs are associated with lower suicide literacy. This finding is aligned with previous studies indicating variations in mental health literacy according to religious beliefs, highlighting this sociodemographic variable as an important factor to be considered (Furnham and Swami, 2018). Therefore, according to these results, the intensity of religious beliefs could not only increase the stigma toward suicide but also reduce knowledge about the subject.

Another important finding was that suicide literacy was associated with suicide stigma. Individuals with a higher degree of knowledge were less prone to stigmatizing suicide, a finding supported by previous studies in Australia (Batterham et al., 2013a),

Germany (Ludwig et al., 2021), and Japan (Nakamura et al., 2021). Particularly, greater knowledge about the causes and treatments of suicide was associated with a lower presence of stigmatizing attitudes. These results reinforce what has been stated in recent meta-analyses and reviews on the subject, justifying the usefulness of implementing universal prevention programs based on suicide literacy (Hofstra et al., 2020) for reducing stigma and increasing help-seeking attitudes (Calear et al., 2014), contributing to the main purpose: the prevention of suicide.

As regards the relationship between sociodemographic, clinical, and literacy variables with the stigma subscale, our results from the regression models were very similar to the study from Germany where Ludwig et al. (2021) explained 13% of the variance. As observed in the literature, both in the general population (Batterham et al., 2013a, 2019; Pereira and Cardoso, 2019) and in the clinical population (Batterham et al., 2019), men had higher levels of stigmatizing attitudes than women. This relationship is justified in the literature based on the possible presence of a lower level of knowledge about suicide in males (Batterham et al., 2013a). Alternatively, the possible influence of traditional masculine ideals, such as stoicism, self-sufficiency, or restricted emotionality, could lead to a lower predisposition to seek help and increase the presence of self-stigma and, consequently, public stigma (Mackenzie et al., 2019). According to our results, lack of knowledge about sources of help in case of suicidal ideation was associated with higher levels of stigma. This association could partially explain the inhibition of help-seeking behaviours for mental health problems (Clement et al., 2015). The reduction of stigma could increase help-seeking behaviour. As pointed out in a recent systematic review of the factors associated with professional help-seeking for suicidality (Han et al., 2018a), stigmatizing attitudes toward suicide and low suicide literacy are important barriers to professional help-seeking. In our sample, it was observed that more than half of the participants did not know where to ask for help in both regions. This is an alarming fact, since the prevalence of suicidal ideation in the current study was 22.7 %, and a large number of suicides could be prevented if people experiencing suicidal thoughts or behaviours sought support from appropriate health services (Hom et al., 2015). It should be noted

that at the end of the evaluation survey, they had several telephone contacts to ask for help.

Our results summarize that, in Spanish-speaking individuals, the three dimensions of suicide stigma could be explained by one or several study variables. Specifically, higher levels of suicide stigma were positively related to lack of knowledge about the topic (i.e., the causes and treatment or prevention), male gender, and adherence to religious beliefs. In addition, it was found that those who were unaware of sources of help for suicidal thoughts or behaviours also showed greater stigma toward suicide.

Regarding suicide glorification, it should be noted that it varied across regions, with Latin Americans showing higher scores than Spanish people.

Finally, as regards isolation/depression-related suicide stigma, it tended to be greater in those who suffered greater anxious symptomatology.

The positive relationships found between clinical variables and the stigmatization of suicide may indicate a possible internalized stigma (Batterham et al., 2013a). This relationship could arise due to the interpretation of the experiences of others based on our own experiences. Specifically, the higher presence of suicidal ideation corresponded to a higher tendency towards stigmatization, in line with previous literature (Batterham et al., 2019), a result that highlights the possibility that this type of attribution could be indicative of a higher risk of suicide (Batterham et al., 2019), where the combination of low knowledge and high glorification of suicide could make it difficult for people with ideation to seek help.

It is important to note that these results should be interpreted with caution. Adding the clinical variables did not produce a significant increase in the explained variance of stigma, being 10% in this study. Thus, the results also suggested that other important factors should be taken into account when addressing the stigma of suicide. For example, variables such as suffering from a mental disorder, a close

person who died by suicide, or some cultural values related to suicide stigma (Mascayano et al., 2015).

Our results suggest the need to work against stigma by promoting knowledge of the phenomenon, aiding resources, and suicide awareness. They are in line with the literature that points out the important role of knowledge in the production of the stigmatization process (Gronholm et al., 2017). However, some limitations of the current study should be mentioned. Due to the sampling method used, the sample may not be completely representative of the Spaniard and Latin American populations. In addition, there are differences between the two samples in several aspects, such as educational level, although this also reflects differences at the population level between Spain and Mexico (Organisation for Economic Cooperation and Development, 2022). On the other hand, there was an overrepresentation of women and individuals in the emerging adulthood stage. Given the stigma surrounding the research topic, self-selection bias may have impacted the sample (although similar limitations applied to the Australian and Japanese samples). The cross-sectional design of the study precludes establishing causality in the relationships examined. The sample exhibited low levels of clinical symptoms, which hinder drawing firm conclusions about the association between mental health problems and suicide stigma.

Future studies would benefit from including heterogeneous sociodemographic profiles that carry greater variability and accurately demonstrate suicide stigma, literacy, and its potential determinants.

Conclusions

Our findings suggest that suicide literacy and some sociodemographic variables (e.g., gender, region) are associated with suicide stigma among a Spanish-speaking population. This study constitutes an essential first step in the development

of suicide prevention programs focused on reducing the stigma of suicide so that they can be adapted to the specific circumstances of each population.

Study 3

*Feasibility and Qualitative Experience of the Breaking the Silence
Mobile Application for Reducing Suicide Stigma, Improving
Knowledge, and Enhancing Help-Seeking Intentions.*

This chapter is currently under review as: Pierantonelli, M., Mira, A., Escrivá-Martínez, T., Jiménez-Díaz, A., & Baños, R. M. (2026). Feasibility and qualitative experience of the Breaking the Silence mobile application for reducing suicide stigma, improving knowledge, and enhancing help-seeking intentions.

3.3.1 Background

Suicide remains one of the leading causes of death worldwide (WHO, 2021a). For instance, in Spain, suicide deaths reached a record of 4,227 in 2022, despite recent data suggesting only a slight decline in 2023 (National Statistics Institute [INE], 2023, 2024). However, these figures represent only part of the problem, as it is estimated that for every suicide there are about twenty attempts (WHO, 2021a).

In this context, despite advances in research and prevention, stigma remains a major obstacle that discourages help-seeking, perpetuates isolation, and limits the effectiveness of prevention programs (Reynders et al., 2014; WHO, 2018). Reducing stigma (alongside promoting public awareness, fostering collective responsibility for the care of vulnerable individuals, and strengthening social connectedness) has been identified as a crucial strategy to reduce suicide rates (Al-Halabí & Fonseca-Pedrero, 2021).

Public stigma toward suicide is often expressed through negative stereotypes that depict those experiencing suicidal ideation as weak, selfish, or lacking willpower (Carpiniello & Pinna, 2017; Ludwig et al., 2020a). When internalized, these beliefs become self-stigma, reducing self-esteem and self-efficacy (Livingston & Boyd, 2010), increasing distress (Scocco et al., 2016), and thereby elevating suicide risk (Oexle et al., 2018). People bereaved by suicide also face stigmatization by association, which can lead to greater grief complications, social withdrawal, and increased vulnerability to depression and suicidal ideation (Sheehan et al., 2018; Levi-Belz & Gilo, 2020).

Recent programs such as *Mental Health First Aid for the Suicidal Person* (Bond et al., 2021), *The Ripple Effect* (Kennedy et al., 2018), *8 Lives* (Dreier et al., 2023), and *2SHARE* (Sheehan et al., 2023) have shown mild to moderate improvements in suicide-related stigma, literacy, and help-seeking confidence. These initiatives, largely grounded in education and indirect contact (Corrigan et al., 2005, 2012), face methodological limitations, including non-randomized designs, reliance on unvalidated or adapted measures, and a lack of long-term follow-up. Moreover, recent evidence cautions that stigma-reduction efforts may unintentionally promote suicide

normalisation—an attitude associated with lower help-seeking and higher suicide risk—when messages fail to avoid portraying suicide as an acceptable or expected response to distress (Oexle et al., 2022b).

To strengthen effectiveness, research indicates that stigma-reduction initiatives are more effective when they integrate multiple mechanisms instead of relying solely on psychoeducational and contact-based approaches (Stuart et al., 2021). Programs incorporating cognitive components have also yielded promising outcomes in reducing mental-health stigma (García-Soriano et al., 2024; Xu et al., 2017).

However, given the difficulty of unlearning deeply ingrained stereotypes and discriminatory behaviours, it may also be beneficial to intervene through the way individuals relate to their own thoughts and emotions (Krafft et al., 2018). In this sense, beyond educational and contact-based components, stigma-reduction interventions could benefit from incorporating elements that promote cognitive and emotional awareness, encouraging participants to acknowledge and respond to stigmatizing thoughts with openness and reflection rather than avoidance or suppression (Kenny & Bizumic, 2016; Masuda et al., 2009). Such approaches are consistent with evidence indicating that stigma-reduction programs frequently combine psychoeducational, cognitive, and narrative components that help participants challenge stigmatizing beliefs and reinterpret their experiences (Yanos et al., 2015). In addition, focusing on personal values may further enhance stigma-reduction efforts by orienting individuals toward actions that are consistent with deeply held motivational priorities, rather than limiting change to shifts in thoughts or attitudes alone (Lannin et al., 2020). Although these mechanisms have shown potential in reducing stigma related to other mental health conditions, they have not yet been systematically applied to suicide stigma, nor adequately examined in Spanish-speaking populations. Exploring their feasibility and relevance in this context could therefore represent an important step toward developing more comprehensive prevention strategies.

Digital platforms offer a promising avenue for delivering stigma-reduction interventions in accessible, low-cost, and anonymous formats. Web-based applications can overcome geographical and social barriers, facilitating engagement among individuals who might otherwise avoid face-to-face programs due to fear of judgment (Rassy et al., 2021; Rodríguez-Rivas et al., 2022). Evidence suggests that online interventions can produce reductions in public stigma comparable to traditional methods while offering greater scalability (Goh et al., 2021). However, most digital programs have targeted mental health stigma more broadly, with few addressing suicide stigma specifically (Dreier et al., 2023; Kennedy et al., 2020).

Given the scarcity of mobile applications addressing suicide stigma, the present study evaluated Breaking the Silence (*BreakSi*; in Spanish, *Rompiendo el Silencio*, *RomSi*), a self-guided intervention implemented as a mobile application and designed to reduce suicide-related stigma, enhance suicide literacy, and promote help-seeking. The intervention integrates psychoeducational content with indirect contact through lived-experience testimonials (strategies shown to reduce stigma) while incorporating elements that foster cognitive flexibility and alignment with personal values, which remain largely unexplored in suicide-related contexts.

The study pursued two complementary aims. First, a predominantly quantitative component (*Study 1*) examined key feasibility indicators, including uptake, adherence, patterns of use, and user-reported acceptability, while also exploring preliminary changes in suicide stigma, literacy, and help-seeking intentions. Second, a qualitative component (*Study 2*) sought to gain an in-depth understanding of participants' experiences with the intervention, including perceived impact, emotional responses, and suggestions for improvement. Together, these components were integrated to provide a mixed-methods feasibility evaluation and to inform the future refinement of the intervention.

3.3.2 Method

Study Design

This study used a single-group, open-trial mixed-methods design to obtain preliminary data on the feasibility, usability, and acceptability of the Breaking the Silence (BreakSi) self-guided mobile application, as well as its potential effects on suicide stigma, literacy, and help-seeking intentions. Quantitative data were collected at two time points: baseline (T0, pre-intervention) and immediately after completing the program (T1). Assessments were administered after each intervention component and at post-intervention (T1) and included an open-ended feedback item. Additionally, post-intervention semi-structured interviews were conducted to explore participants' experiences and suggestions for improvement.

Participants, recruitment, and eligibility criteria

Online and university-based recruitment strategies were complemented by collaborators who shared study information within their networks to enhance visibility. Given the online format, participation was open to adults from any Spanish-speaking country.

A total of 35 participants who completed both the intervention and the post-intervention assessment were included in the analyses. No formal power calculation was conducted, as there is no established gold standard for estimating sample sizes in feasibility trials. Following recommendations for pilot feasibility studies (Whitehead et al., 2016), we aimed to recruit approximately 30 participants, which was considered sufficient to assess feasibility and acceptability outcomes and to provide preliminary estimates to inform future trials.

To be eligible, individuals had to be 18 years or older, fluent in Spanish, and have regular access to a smartphone and internet connection, as well as basic digital literacy to engage with the intervention. Exclusion criteria included high suicide risk,

defined as a total score of 21 or higher on the Suicidal Ideation Attributes Scale (SIDAS; Van Spijker et al., 2014; Pierantonelli et al., 2024) or a score between 7 and 10 on item 3 (closeness to attempt) of the same scale, and high social desirability bias, operationalized as a score of 14 or above on the Marlowe–Crowne Social Desirability Scale (MC-SDS; Crowne & Marlowe, 1960; Gutiérrez et al., 2016).

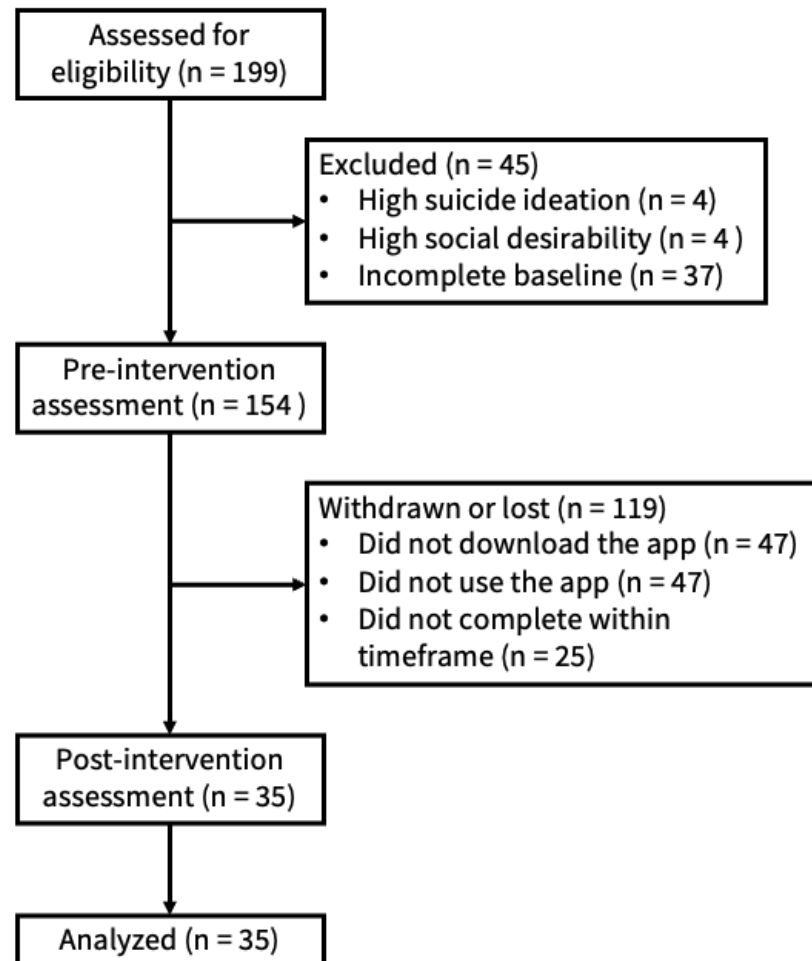
Recruitment and data collection took place entirely online between August and September 2025. Interested individuals accessed a secure Qualtrics link, where they received detailed study information and provided electronic informed consent before participating. All participants reporting any level of suicidal ideation on the SIDAS received information about specialized mental health services and were actively encouraged to seek professional support. The participant flow throughout the study is presented in Fig. 1.

Qualitative interview participants were recruited from among those who completed the intervention.

The study was approved by the Ethics Committee of the University of Valencia (protocol number 2024-PSILOG-3563219) and was registered at ClinicalTrials.gov (ID: NCT06759129).

Figure 1.

Flowchart of Participants.



Intervention

Breaking the Silence (BreakSi; Rompiendo el Silencio, RomSi, in Spanish) is a fully online, mobile application targeting the general population. BreakSi aims to improve suicide literacy, reduce suicide stigma, and strengthen intentions to seek professional help and to support others with suicidal thoughts or behaviours. Its content was adapted from existing stigma-reduction programmes, with particular emphasis on suicide stigma, and developed in accordance with established recommendations for safe digital communication about suicide and best-practice

guidelines for anti-stigma interventions (López-Vega et al., 2022; Muñoz et al., 2020; WHO, 2021a).

BreakSi is structured around four evidence-informed components—education, indirect contact, cognitive flexibility, and values—shown to contribute to stigma reduction. Educational content addresses suicide stigma and suicide literacy. Drawing on contemporary models of psychological flexibility, the intervention encourages participants to notice how language and cognitive processes contribute to rigid, stigmatizing beliefs and to cultivate a more open, less judgmental stance toward suicidal experiences. Additional psychoeducational material provides accessible, evidence-based information on suicide prevalence, risk and protective factors, warning signs, and supportive responses, while discouraging common unhelpful reactions. The inclusion of cognitive flexibility and values-based components responds to a specific limitation identified in prior suicide stigma interventions: purely educational or contact-based approaches have shown limited effects on deeply held, value-laden attitudes toward suicide, which appear particularly resistant to knowledge-driven change (Oexle et al., 2025; Lannin et al., 2020). By targeting how individuals relate to stigmatising cognitions, rather than attempting to replace them directly, and by anchoring behavioural change in personally meaningful values, these components aim to address dimensions of stigma that education and contact alone have not consistently modified.

Indirect contact is embedded throughout the intervention. A recurring character offers brief reflections linked to each theme, and contextualized vignettes depict everyday situations involving individuals with suicidal ideation or behaviour and their close others. The cognitive flexibility component employs metaphors, paradoxes, and interactive scenarios to help participants navigate discomfort when engaging with suicide-related content, addressing common suicide myths through concise explanations and experiential tasks that promote reflection and more nuanced interpretations. The values component supports users in identifying and strengthening personally meaningful values (especially compassion, empathy, and social responsibility) through short vignettes that revisit suicide-related myths as they

appear in everyday contexts and prompt reflection on discrepancies between values and actions.

Content across all components is delivered through brief, interactive cards combining audiovisual resources, self-reflection prompts, and short quizzes. Each card includes at least one reflection or decision-making task, followed by immediate, tailored feedback to consolidate learning and promote engagement. A more detailed explanation of the intervention can be found in Chapter 3 (Study 4) of this dissertation and in the Study 4 Annex. Additionally, a demonstration video of the application is available at the [following link](#) (see the Study 4 Annex for alternative access options).

Participants were initially encouraged to complete the program within 10 days; however, those demonstrating consistent engagement were offered an additional 10 days to finish the content. Daily brief assessments were delivered once per day through the same platform during the intervention period. Motivational emails and notifications were sent on days 4 and 8 to support adherence, with content tailored to participants' progress—reinforcing engagement when adherence was adequate or reactivating motivation when participation declined.

Outcomes

Quantitative Outcomes

A. Feasibility and acceptability outcomes.

Feasibility and acceptability were assessed using a tailored questionnaire based on the Unified Theory of Acceptance and Use of Technology (UTAUT; Venkatesh et al., 2003, 2012), covering performance expectancy, effort expectancy, facilitating conditions, and hedonic motivation. These items evaluated perceptions of usefulness, ease of use, access to necessary resources, and enjoyment. Additional ad hoc items assessed the clarity and relevance of the content, emotional engagement, suitability of the mobile format, and willingness to recommend the program. All items were scored on a 7-point Likert scale ranging from “strongly disagree” to “strongly agree,”

in line with recommendations from prior uses of the model (Cruz et al., 2022; Fitrianie et al., 2021).

Barriers to engagement were measured with a brief set of ad hoc items scored on a 0–4 visual analogue scale, capturing the frequency of common obstacles such as forgetfulness, limited time, technical issues, and low motivation.

B. Preliminary efficacy outcomes

Suicide-related stigma was assessed with the Stigma of Suicide Scale–Short Form (SOSS-SF; Batterham et al., 2013b; Pierantonelli et al., 2024). This 16-item measure asks participants to indicate their agreement with common descriptors of a person who dies by suicide, yielding three subscales that reflect stigmatizing, glorification/normalization, and isolation/depressive attributions. Items are rated on a 5-point Likert scale, with higher scores indicating stronger endorsement of the corresponding descriptors.

Suicide knowledge was measured using the Literacy of Suicide Scale–Short Form (LOSS-SF; Calear et al., 2022). The instrument assesses knowledge across four domains—signs and symptoms, causes and nature, risk factors, and prevention and treatment—through true/false items with a “don’t know” option. The study employed the validated 10-item Spanish version, which has demonstrated solid psychometric properties in Spanish-speaking populations (Pierantonelli et al., 2024). Total scores reflect the number of correct responses.

Help-seeking intentions were measured using the General Help-Seeking Questionnaire (GHSQ; Wilson et al., 2005). Participants indicated how likely they would be to seek support if experiencing suicidal thoughts, selecting from six possible sources: four informal options (partner, friends, parents, and other relatives) and two formal ones (helplines and mental health services). An additional response option (choosing not to seek help) was included to capture avoidance. Items were scored on a 7-point Likert scale, with higher values reflecting stronger intentions to seek support. The questionnaire can be examined either as a global indicator or at the item

level, and responses related to formal sources may also be combined into a specific subscale, as suggested in previous work (Pacheco del Castillo, 2017).

C. Secondary outcomes

Personal suicide stigma was measured using the Personal Suicide Stigma Questionnaire (PSSQ; Rimkeviciene et al., 2019), a 16-item self-report scale assessing personal stigma toward suicidality across three dimensions: rejection, minimization, and self-blame (Rimkeviciene et al., 2019). Items are rated on a 5-point Likert scale ($\alpha = .95$). The scale was administered only to participants reporting current suicidal ideation. A version including a "not applicable" (NA) response option was used for items presupposing disclosure of suicidality; when selected, subscale scores for rejection and minimization were not computed, as these dimensions assess perceived and experienced stigma contingent on disclosure (Rimkeviciene et al., 2021).

D. Clinical outcomes

Suicidal ideation was assessed with the Suicidal Ideation Attributes Scale (SIDAS; van Spijker et al., 2014; Pierantonelli et al., 2024). The scale comprises five items evaluating key attributes of the ideation experience—frequency, controllability, proximity to an attempt, distress, and interference with daily life—during the past month. Items are scored on an 11-point scale (0–10), and higher scores reflect greater severity. The Spanish version has demonstrated adequate psychometric performance, including good model fit and acceptable internal consistency.

Depressive symptoms were measured using the Patient Health Questionnaire-9 (PHQ-9; Spitzer et al., 1999; Diez-Quevedo et al., 2001), a nine-item self-report scale aligned with DSM diagnostic criteria. Responses range from 0 ("not at all") to 3 ("nearly every day"), yielding total scores between 0 and 27. Both the original and Spanish versions show strong reliability and validity, with the latter exhibiting good sensitivity and specificity for detecting depressive symptoms.

Anxiety symptoms were evaluated with the Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006; García-Campayo et al., 2010). This seven-item measure

asks participants to rate the frequency of anxiety-related symptoms over the previous two weeks using the same 0–3 response scale. Total scores range from 0 to 21. The scale shows excellent internal consistency and construct validity in both its original and Spanish versions.

E. Daily measures

Participants completed brief daily surveys assessing suicide stigma, suicidal ideation, help-seeking intentions, and exposure to suicide-related content in the previous 24 hours (with optional contextual detail when exposure was endorsed). Daily surveys were available only while participants were completing the application (from initiation until intervention completion); therefore, the number of daily survey opportunities varied as a function of each participant's completion time. Suicidal ideation (SIDAS) and help-seeking intentions (GHSQ) were assessed on three separate days during the intervention. In the present feasibility study, daily measures were used solely to quantify response rates (i.e., completion of daily surveys) as an indicator of assessment feasibility and participant burden; item-level responses were not analysed.

Outcomes of qualitative participant experience

A. Qualitative acceptability and user experience measures

Qualitative data were collected through three complementary sources to examine users' experiences with the intervention: in-app open-ended responses during the intervention, post-intervention open-ended feedback, and post-intervention qualitative interviews. In-app open-ended prompts were embedded within the program and administered at the end of each app component, allowing participants to comment on the clarity of the material, their immediate impressions, emotional responses, and any changes in understanding elicited by the content. In addition, a further open-ended prompt was included in the final values section,

inviting participants to identify actions they could undertake that were consistent with the values highlighted throughout the intervention.

To obtain a broader evaluation of overall acceptability and user experience, the post-intervention assessment included an open-ended question asking participants whether they would change or improve any aspect of the program.

Finally, follow-up telephone interviews were conducted with a subsample (n = 8) of up to ten completers. These semi-structured interviews explored users' overall impressions, usability, perceived learning, emotional responses, and recommendations for refinement, without reference to any specific app component.

Statistical analysis

Quantitative analyses were conducted using IBM SPSS Statistics version 29 and RStudio version 2023.06.0+421 (Posit Team, 2023). Descriptive statistics were used to summarise feasibility and acceptability outcomes, as well as outcome measure data. Continuous variables were described using means and standard deviations (SD) or medians, as appropriate, while categorical variables were summarised using absolute frequencies and percentages.

As this was a feasibility study with a limited sample size, analyses were primarily descriptive and exploratory. Inferential analyses were not intended to draw definitive conclusions regarding intervention effectiveness. Instead, analyses aimed to characterise preliminary patterns of change and to assess the suitability of outcome measures and analytic procedures to inform the design of future, adequately powered studies (Eldridge et al., 2016).

Exploratory inferential analyses were conducted for predefined primary outcome measures to examine pre-post changes following the intervention. Normality of pre-post difference scores was assessed using visual inspection of histograms and the Shapiro-Wilk test. When assumptions for parametric testing were

met, paired-sample *t*-tests were used to compare pre- and post-intervention scores. When normality assumptions were not met, the non-parametric Wilcoxon signed-rank test was applied. Effect sizes were calculated using Cohen's *d* for paired-sample *t*-tests and effect size *r* for Wilcoxon tests to estimate the magnitude of observed changes. A two-tailed alpha level of 0.05 was applied, with statistical significance interpreted cautiously in line with the feasibility nature of the study.

Changes in suicide literacy subscales were summarised descriptively. Median scores and distributional plots (boxplots with individual data points) were used to illustrate patterns of change from pre- to post-intervention.

Qualitative interview data were analysed using Consensual Qualitative Research (CQR; Hill et al., 2005; Hill & Knox, 2021). Semi-structured telephone interviews were audio-recorded and transcribed verbatim. Two researchers independently reviewed the transcripts, developed domains and core ideas, and conducted the cross-analysis through a consensus process. When discrepancies arose, a third researcher was consulted to facilitate discussion and reach agreement. Categories endorsed by all or all, but one participant were labelled as general, those endorsed by more than half were considered typical, and those endorsed by at least two participants but fewer than half were labelled as variant. ATLAS.ti (Version 9; ATLAS.ti Scientific Software Development GmbH, 2024) was used to support data organization and analysis.

Other qualitative data derived from post-intervention and post-section open-ended responses were analysed descriptively, given their brief and targeted nature.

Quantitative and qualitative results were subsequently integrated during the interpretation phase to provide a comprehensive mixed-methods understanding of feasibility, usability, acceptability, and perceived impact of the intervention.

3.3.3 Results of Feasibility and Preliminary Outcomes

Participants' characteristics

A total of 35 participants took part in the study. Their ages ranged from 18 to 69 years ($M = 21.71$, $SD = 13.70$), and most identified as women (85.7%). Most participants had completed secondary or vocational education (77.1%) and were students at the time of participation (65.7%). The majority were born in Spain (82.9%) and were currently residing in the country (85.7%).

Most participants (80.0%) reported knowing where to seek psychological help in case of suicidal ideation. Regarding exposure to suicide-related events, around one-third of the sample (34.2%) indicated having known someone who had attempted or died by suicide. Among those reporting such exposure ($n = 12$), most described the relationship as close or very close (83.3%).

Baseline clinical scores indicated mild depressive and anxiety symptoms and overall low levels of suicidal ideation. Four participants (11.1%) reported any suicidal ideation, with total SIDAS scores ranging from 3 to 19. Among those participants reporting suicidal ideation, self-stigma was assessed using the PSSQ. Only the self-blame subscale was reported because most participants had no scorable responses on the remaining subscales. Self-blame scores ranged from 11 to 25 ($M = 18.00$, $SD = 5.72$). Further details are presented in Table 1.

Table 1.*Sociodemographic and Clinical Characteristics (N=35)*

Gender identity, n (%)	
Woman	30 (85.7%)
Man	4 (11.4%)
Transgender man	1 (2.9%)
Age (years) (M,SD)	25.71 (13.70)
Education, n (%)	
Basic studies	4 (11.4%)
Baccalaureate/Vocational training	27 (77.1%)
University studies	4 (11.4%)
Occupation, n (%)	
Student	23 (65.7%)
Employed	10 (28.5%)
Retired/Disabled	2 (5.7%)
Country of origin (Spain), n (%)	29 (82.9%)
Country of residence (Spain), n (%)	30 (85.7%)
Religious belief, n (%)	
Not religious	12 (34.3%)
Slightly religious	8 (22.9%)
Moderately religious	8 (22.9%)
Quite religious	5 (14.3%)
Very religious	2 (5.7%)
Information on sources of aid, n (%)	
Yes	28 (80.0%)
No	7 (20.0%)
Experience with suicide in the environment, n (%)	
No	23 (65.7%)
Yes, only suicide attempt	8 (22.8%)
Yes, death by suicide	4 (11.4%)
Closeness to the affected person, n (%)	
Very close	6 (50.0%)
Close	4 (33.3%)
Not very close	2 (16.7%)
Depression - PHQ9 (M, SD)	7.49 (4.28)
Anxiety - GAD7 (M, SD)	5.69 (4.31)
Suicidal ideation - SIDAS, n (M, SD)	4 (10.0, 7.07)

Note. Closeness ratings were provided only by participants reporting prior exposure to suicide-related events (n = 12)

Recruitment and adherence rates

A total of 199 individuals initiated the screening survey. Eight participants (4.0%) were excluded based on eligibility criteria (i.e., elevated suicidal ideation or high social desirability). An additional 37 individuals (18.6%) did not complete the baseline assessment and were therefore not enrolled. The remaining 154 participants provided complete baseline data and received instructions to download the app, reflecting a high initial uptake of the study (77.4%; 154/199). However, 47 (30.5%) did not download the app, and another 47 (30.5%) downloaded it but did not open or use the app's content. In total, 60 participants accessed the app and started the intervention, representing an intervention uptake of 39.0% (60/154).

Among the 60 participants, 21 (35.0%) did not complete the program within the expected time frame, despite receiving reminders and motivational messages, and 4 (6.6%) failed to complete the post-intervention assessment. Overall, 35 participants initiated the intervention and completed the post-intervention assessment. The participant flowchart is presented in Fig. 1

Engagement and acceptability

Adherence to the application

Participants completed the intervention in an average of 6.26 days (SD = 4.06). Nearly one quarter of the sample (22.9%) completed the program in a single day. Most participants (80%) finished within the recommended 10-day window, whereas a small subset (20%) required additional time, taking up to 17 days.

In terms of active use, the app was accessed on an average of 2.74 distinct days (SD = 1.58). Most participants (74.3%) logged into the app between one and three times, whereas a minority (25.7%) did so between four and six times.

Regarding onboarding, most participants downloaded the app as soon as they received the instructions, with 68.6% doing so on the same day and 14.3% within one day. Very few participants required additional time (up to six days).

In contrast, slightly less than half of the participants (40.0%, $n = 14$) began using the app on the same day they downloaded it, while the remaining users took between one and ten days to log in for the first time.

Adherence to the intervention varied within the sample. Twenty-four participants completed the full intervention, while the remaining 11 completed it only partially (6 completed less than half of the intervention content, and 5 completed more than half). Further details on intervention adherence and attrition are provided in Table 2.

Regarding daily assessment completion, response rates were highly variable. Daily surveys were not assigned for 7 of 35 participants (20%) because the intervention was completed within one day and before the scheduled survey time. Among participants for whom daily surveys were assigned ($n = 28$), 18 (64%) completed at least one daily survey, whereas 10 (36%) completed none (0% response). Response rates ranged from 0% to 100% (median = 25%), including 6 participants with 100% completion.

Table 2.

Intervention Adherence and Attrition Rates

	N	%
Intervention starters with post-assessment completion	35	100
Completers (all intervention content)	24	68.5
Non-completers	11	31.4
Completed more than half of the intervention content	5	14.2
Completed less than half of the intervention content	6	17.1

Acceptability and barriers

Participants consistently reported that the application was clear, easy to use, and supported by adequate resources and technological conditions. They also indicated a strong understanding of the program content and expressed high willingness to recommend the intervention to others. Emotional engagement and enjoyment were generally positive, although ratings related to perceived usefulness in daily life tended to be comparatively lower than other acceptability indicators. Table 3 presents a detailed breakdown of the mean scores, standard deviations, and agreement rates for each acceptability item.

Reported barriers to engagement reflected a heterogeneous pattern. Forgetting to use the app and lack of time were the most commonly endorsed obstacles, whereas issues related to usability, technical functioning, or internet connectivity were less frequently reported. Only a small proportion of participants indicated low motivation or boredom while using the program. Fig. 2 shows the full distribution of responses for each barrier item across the five response categories.

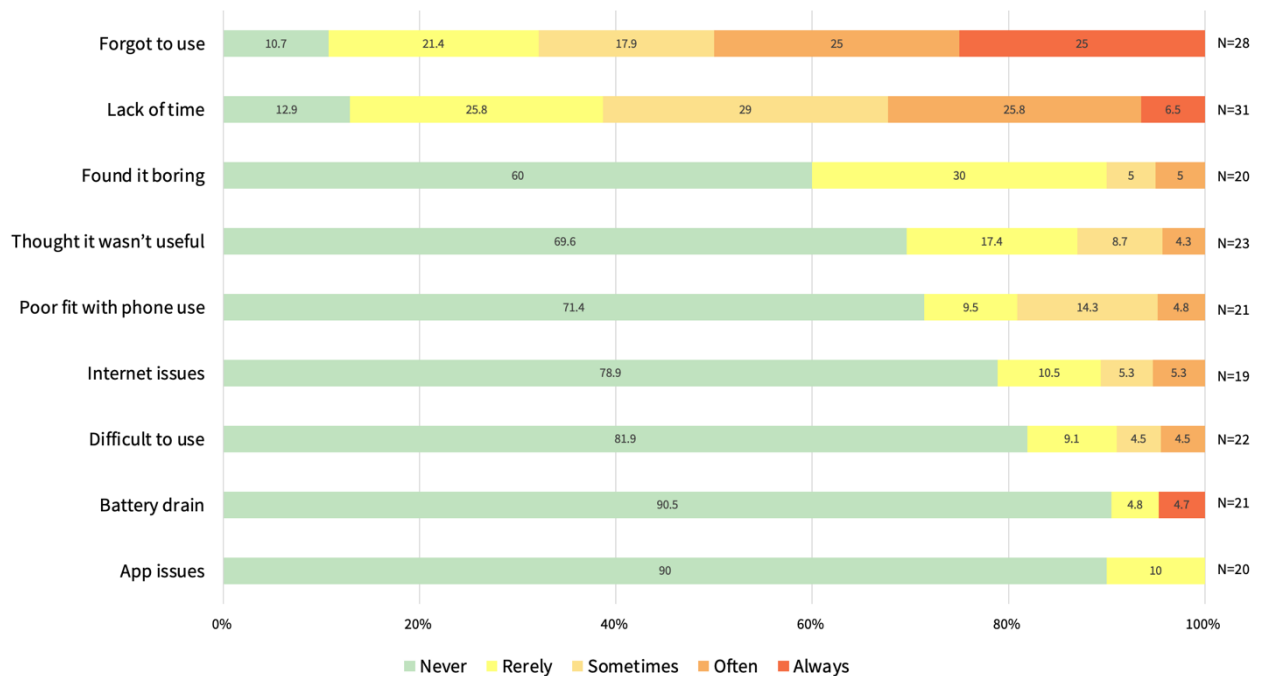
Table 3.*Acceptability and Usability of BreakSi*

	M (SD)	Agree/strongly agree, %
I had access to the necessary resources to use the application.	6.88 (0.41)	97.0%
Interaction with the mobile application was clear and understandable.	6.47 (1.18)	91.2%
The application was easy to use.	6.50 (1.26)	91.2%
I had sufficient knowledge to use the application.	6.79 (0.59)	91.2%
Learning to use the application was easy for me.	6.41 (1.32)	88.2%
I clearly understood the program content.	6.56 (0.89)	88.2%
I would recommend this program to someone experiencing a difficult situation.	6.47 (0.86)	88.2%
The internet was an appropriate medium for delivering this program.	6.47 (0.99)	82.4%
The program helped me reflect on myself and my current life situation.	6.18 (1.24)	76.5%
I felt supported throughout the program, despite it being delivered online.	5.94 (1.45)	73.5%
I liked using the application.	6.03 (1.35)	70%
Using the application was enjoyable.	5.88 (1.65)	67.6%
The application was useful in my daily life.	5.41 (1.37)	52.9%

Note. Higher scores indicate stronger agreement on a 7-point Likert scale. Percentages refer to participants who selected *agree* or *strongly agree* (scores of 6 or higher). *N* = 34.

Figure 2.

Frequency of Reported Barriers to Engagement with Breaksi



Preliminary effectiveness data

Primary outcomes: Stigma, Literacy, and Help-Seeking intentions

Paired-samples t tests examining primary outcomes are presented in Table 4. Regarding suicide stigma, scores on the stigma subscale showed a small, marginally non-significant reduction ($p = .068$). In contrast, participants reported significant decreases in beliefs linking suicide to depression (isolation/depression subscale) and in perceptions of suicide as normalized or glorified (glorification/normalization subscale), with effects in the small-to-moderate range.

Consistent with these changes, suicide literacy increased significantly from pre- to post-intervention. This corresponded to an increase in the LOSS-SF total score, reflected in a rise in the proportion of correct responses from 65.7% at baseline to 75.1% post-intervention. As illustrated in Fig. 3, improvements were most evident in

the domains of causes/nature and risk factors, whereas scores for signs and especially treatment/prevention showed minimal change.

Intentions to seek help from professional sources (GHSQ–Formal) showed a small, non-significant pre–post difference. In line with this, the GHSQ total score did not change significantly ($Z = 0.49$, $p = .628$, $r = .08$). Finally, intentions to seek help from informal sources (partner, friends, parents and other family members) showed a slight increase from pre-intervention ($M = 4.44$, $SD = 1.81$) to post-intervention ($M = 4.64$, $SD = 1.50$), although these analyses were exploratory and not subjected to inferential testing.

Table 4.

*Pre–Post Changes in Primary Outcome Measures (Paired-Samples *t*-Tests)*

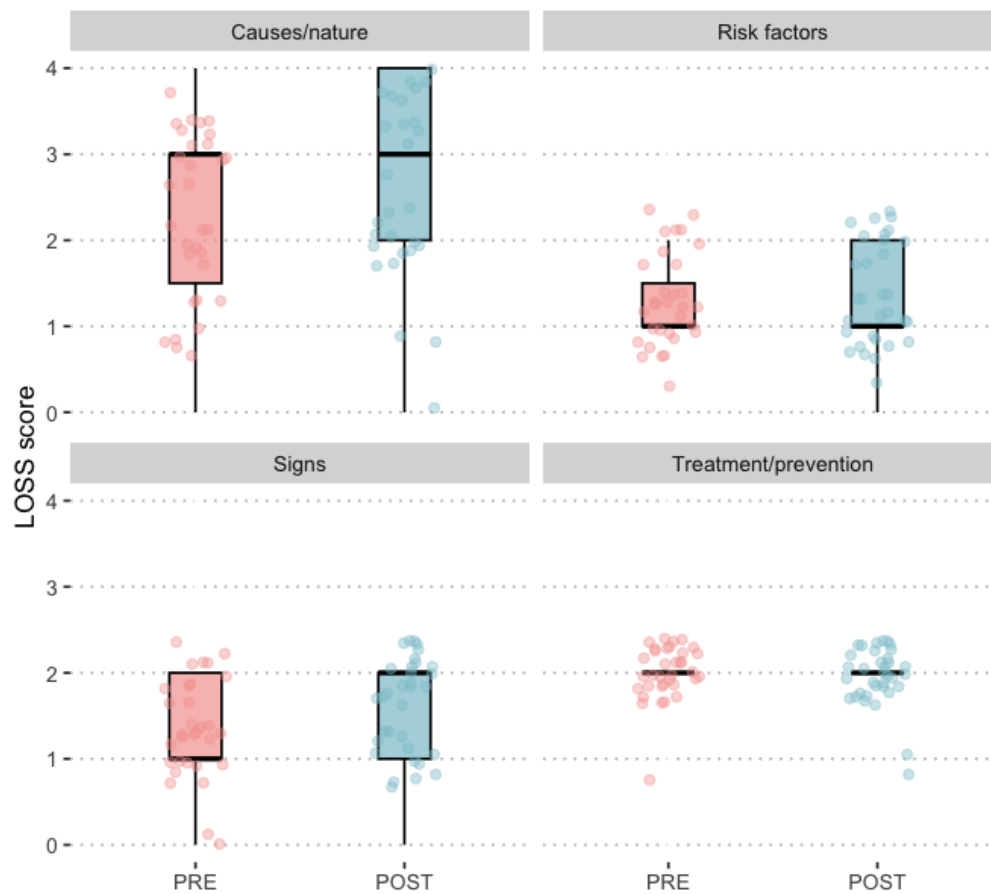
Measure	PRE M (SD)	POST M (SD)	<i>t</i> value	<i>df</i>	<i>p</i> value	Cohen's <i>d</i>
SOSS-SF						
Stigma	1.77 (.52)	1.54 (.65)	1.88	34	.068	.32
Isolation/ depression	3.53 (.77)	2.92 (.89)	4.27	34	< .001***	.72
Glorification/ normalization	2.86 (.72)	2.56 (.73)	2.08	34	.045*	.35
LOSS-SF	6.57 (1.82)	7.51 (1.94)	-2.85	34	.007**	-.48
GHSQ – Formal help-seeking	4.74 (1.66)	4.89 (1.57)	-.69	32	.49	-.12

Note. Negative *t* values indicate higher post-test scores

* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 3.

Changes In LOSS Subscale Scores from Pre- to Post-Intervention



Note. Higher scores reflect greater knowledge within each LOSS domain. The Treatment/Prevention subscale showed a very limited range (1–2), resulting in minimal graphical variability.

Clinical outcomes

Analyses of clinical symptom measures indicated small reductions in depressive and anxiety symptoms across the intervention period among the 34 participants who provided post-intervention data. Depressive symptoms (PHQ-9) decreased from a mean of 7.49 (SD = 4.20) at pre-test to 6.41 (SD = 4.50) at post-test, and this change was statistically significant, $Z = -2.11$, $p = .035$, $r = .36$. Anxiety

symptoms (GAD-7) showed a slight reduction from 5.69 (SD = 4.31) to 4.47 (SD = 3.59), although this trend did not reach statistical significance, $Z = -1.70$, $p = .089$, $r = .29$.

Finally, suicidal ideation (SIDAS) remained stable across the intervention period, with mean scores changing only slightly from 1.18 (SD = 3.90) at pre to 1.06 (SD = 3.37) at post. This change was not statistically significant, $Z = -0.43$, $p = .670$, $r = .07$.

3.3.4 Results of qualitative participant experience

In-app open-ended responses during the intervention

Values-consistent actions endorsed by participants

At the end of the intervention, within the final values section of the application, participants were invited to reflect on how the program could translate into concrete, values-consistent actions. Following a brief values identification exercise, they responded to an open-ended text-based question about what actions they could take. A total of 29 out of 35 participants provided a written response.

Participants' responses clustered around five main categories. The most frequently endorsed category, *Supportive listening and presence*, emphasized emotional availability and attentiveness, particularly the importance of staying engaged and present for others rather than focusing on giving advice or solutions (e.g., "listening even when I don't have the perfect words"). Closely related, *Non-judgmental and empathic attitudes* captured participants' intention to approach emotional suffering with openness and understanding, highlighting the need to suspend assumptions and respond with empathy rather than evaluation (e.g., "showing empathy and trying to understand what is happening"). A third category, *Offering support and accompaniment*, reflected a more active stance, involving staying close, offering help proactively, and reassuring others that they are not alone, even when support was not explicitly requested (e.g., "being there for them even if they don't ask for help"). *Open communication about suicide* encompassed references to not

avoiding the topic and creating space for direct and honest conversations, including sharing personal experiences as a way to give visibility to a still-silenced issue (e.g., “sharing my own experience to give a voice to a problem that is still very silenced”). Finally, *Information seeking and awareness of warning signs* reflected participants’ intention to increase their preparedness by learning how to recognize warning signs and seeking reliable information to respond more appropriately (e.g., “informing myself better to know how to act”). The key terms associated with each category are visually illustrated in Fig. 4 using a word cloud. Full verbatim responses are provided in Study 3 Annex.

Figure 4.

Word Cloud of Values-Consistent Actions Endorsed by Participants



Post-section opinion

Participants were invited to share their impressions regarding clarity, emotional responses, and any changes in understanding elicited by the content.

During the educational components (Sections 1 and 2), responses were largely positive and convergent, with participants frequently highlighting the clarity and accessibility of the material and reporting increased knowledge, particularly regarding stigma and suicide-related concepts. Concrete data, examples, and visual materials were perceived as helpful in supporting understanding, and some participants reported feeling better prepared to approach conversations about suicide and emotional distress. A small number of participants indicated prior familiarity with the topic.

Building on this, feedback related to the myths (Section 3) reflected a more explicit reconsideration of commonly held beliefs about suicide. Several participants acknowledged having previously endorsed socially shared myths and described a more nuanced understanding of suicide as related to psychological suffering rather than moral weakness or selfishness, alongside greater awareness of the importance of sensitive and informed communication.

By contrast, feedback provided in the final section of the program (Section 4) tended to adopt a broader and more integrative perspective on the intervention as a whole. Compared to earlier sections, fewer participants commented at this stage, and responses mainly consisted of general reflections on the usefulness of the program and the relevance of addressing suicide more openly, rather than content-specific feedback.

Post-intervention open-ended feedback

When explicitly asked post-intervention about potential changes or improvements, a substantial proportion of participants (17 out of 35) indicated that they would not change anything, while three participants did not provide a response. Among those who offered suggestions ($n = 15$), the most commonly reported area for improvement concerned navigation and continuity between sections. A smaller number of participants suggested adjustments related to the format and pacing of the content, such as shorter sections, more concise videos, or greater interactivity. Finally, two participants raised considerations regarding the scope of the intervention,

suggesting that some content could be further tailored to individuals with lived experience of suicidal ideation.

Post-intervention qualitative interviews

To provide a comprehensive account of users' experiences with BreakSi, eight semi-structured interviews were conducted. Following a CQR approach, the study identified three domains comprising a total of 15 categories. Regarding cross-case frequency, 7 categories were classified as general, 5 as typical, and 3 as variant. The domains were: Overall experience and evaluation (Domain 1), perceived effects of the application (Domain 2), and usability (Domain 3). Quotations are attributed using participant codes (P1–P8). Results are presented in Table 5.

Table 5.

Domains, Categories, and Illustrative Ideas of the 8 Participants.

Domains and categories	Frequency	Illustrative core idea
Overall experience and evaluation		
<i>Overall positive evaluation of the application</i>	Typical (5)	P5 reported a positive overall experience P6 reported a positive overall experience, attributing it to the app's structured content and supporting examples P8 described a highly positive experience, attributing it to the app's easy-to-follow pacing, clear structure, and the perceived relevance of the information
<i>Positive evaluation of content</i>	Typical (5)	P1 valued the videos as a useful resource for exploring the topics in greater depth P6 evaluated the content very positively and highlighted the detailed explanations
<i>Perceived usefulness</i>	General (7)	P3 considered the information brings to light to be important for increasing public awareness

		P6 viewed the app as useful because it helped them identify and label attitudes and concepts they had previously used without being fully aware of them P8 perceived that more people should know about the app, arguing that collective engagement could contribute to reducing suicides
<i>Recall of highlighted content</i>	General (8)	P1 recalled, as a key feature of the app, information about the global frequency of deaths by suicide P2 recalled the app's examples and the different ways of responding to the same situation P7 recalled content aimed at challenging common myths about suicide P8 specifically recalled guidance on how to support someone experiencing suicidal ideation
Perceived effects of the application		
<i>Acquisition of support and communication strategies</i>	General (8)	P3 reported learning what to say and how to help if they encounter someone with suicidal ideation in the future P6 highlighted learning the importance of interpersonal support, as well as seeking professional help P7 reported that if faced with such a situation, they would draw on what they learned about how to talk about these issues P8 learned that when someone is struggling, it is better to ask about their feelings rather than minimize their distress

<i>Increased self-confidence and willingness to seek help</i>	Typical (6)	P1 reported feeling more capable of supporting someone in need and of seeking help if necessary, after using the app P6 felt more able to pick up on when someone might be experiencing suicidal distress, even if they tried to downplay it, and to take those signals seriously P8 stated improved self-efficacy after learning strategies to address the topic
<i>Changes in beliefs and attitudes toward suicide</i>	General (7)	P1 noted the presence of stigma surrounding suicide and the need to change it P2 indicated that the app reinforced their belief in the importance of talking about mental health, so it does not remain a taboo P3 emphasised the importance of discussing the issue rather than concealing it, while avoiding offering false hope P6 points out that it helped him understand that if you do not express your discomfort or ask for help, other people may not notice it (linking this reflection to a previous personal experience) P7 stated that the app had made them reflect on the myths and stigmatisation surrounding people who die by suicide and their families
<i>Empathy toward others</i>	Variant (2)	P5 expressed empathy toward people who feel very unwell and hopeless about improving, and a desire to offer support and encourage them to seek help

		P7 indicated that the app prompted strong empathy toward people going through that situation
<i>Positive emotions of relief and hope</i>	Variant (2)	P2 expressed hope upon realizing that initiatives like this are being developed within healthcare, suggesting that there is interest and support available P3 described a general sense of relief and hope, linked to the message that the situation can improve and has a way forward
<i>Mild emotional activation related to the content</i>	Variant (2)	P2 indicated that the app elicited mild emotional stirring linked to prior personal experiences, which they felt able to manage P8 described experiencing a temporary low mood while engaging with the app, which they managed by reflecting afterward; the reaction was not tied to a specific module but to the experience overall
Usability		
<i>Ease of use</i>	General (7)	P1 reported that moving between contents was "quite easy" and that nothing hindered their use of the app P2 described the app's navigation as intuitive and easy P3 reported that the app felt comfortable to use overall, including its general functioning and navigation P4 stated that the app was very easy to use

<i>Ease of progression</i>	General (7)	P2 stated that the pace was easy to follow P4 reported feeling drawn to continue using the app; although they initially planned to progress little by little, they ended up wanting to keep going and do more P8 reported that the pace was easy to follow and linked this to the content being well structured
<i>Navigation flow issues</i>	Typical (6)	P1 suggested improving navigation so that, at the end of a module, the app takes the user directly to the next module rather than returning to the start P7 reported that they would have preferred sections to link directly to one another—without having to exit and re-enter the next section and with fewer subsections to complete it in one go—although they still evaluated the app very positively overall
<i>Suggestions for improvement</i>	General (7)	P4 suggested that the app's format could be applied to other mental health topics, facilitating learning about issues they were less familiar with P5 suggested adding a progress indicator so the app clearly shows where the user is P6 recommended making the text more interactive and visually engaging (e.g., adding more color)

		P8 suggested enabling direct contact with a psychologist for more personalized support on specific concerns, beyond the official helplines provided
Engagement-related features	Typical (6)	P6 reported that the app helped sustain engagement because it was not complicated to use P7 reported that the app's aesthetics and the interest of the content helped sustain engagement and motivated them to keep reading P8 reported that the content felt useful, which helped sustain engagement

Domain 1: Overall experience and evaluation

This domain captures participants' overarching evaluations of BreakSi, including global judgments about the application as a whole and more specific appraisals of its content. Participants' accounts reflect broad perceptions of quality and perceived value or suitability for their needs and expectations. In addition, the domain includes aspects of the app that remained salient after use and were mentioned when participants reflected on the intervention. Four categories were identified within this domain: Overall positive evaluation of the application, Positive evaluation of content, Perceived usefulness, and Recall of highlighted content.

1.1 Overall positive evaluation of the application (Typical): This category captures participants' global expressions of satisfaction and positive judgments about their experience using BreakSi. Five participants reported an overall favourable experience, often attributing it to the app being engaging, well-designed, and didactic in supporting learning. Illustrating this overall appraisal, P7 stated that:

“Overall, I had a really positive opinion of the app because you learn a lot from it in a very didactic way. Everything is explained really well, with visual examples that make it much easier to understand, and it goes step by step so you can really internalize it, so I liked it a lot.”

1.2 Positive evaluation of content (Typical): This category reflects participants' favourable appraisals of how BreakSi's content was presented and communicated, including perceptions of clarity, appropriateness, and tone when addressing suicide. Five participants evaluated the content positively, describing the topics as well-explained and handled appropriately overall. Regarding tone, P2 remarked:

“It felt formal yet approachable. I thought it was appropriate.”

1.3 Perceived usefulness (General): This category captures participants' perceptions of BreakSi as a useful and practical resource, particularly for people at risk and for individuals with limited prior knowledge about suicide. Participants noted that the app increased awareness and offered guidance on how to respond to suicidal

ideation, and some emphasized its potential preventive impact if more widely disseminated. One participant (P2) expressed it in these words:

“I think it’s a very practical resource for people who don’t have much knowledge about the topic. A way to, if they’re willing, learn more and, above all, understand how to act and what to say when someone is having these kinds of thoughts.”

1.4 Recall of highlighted content (General): This category captures participants’ recollection of specific app elements that remained salient after use. All participants recalled at least one component, including specific information about suicide (e.g., prevalence and how to provide help), content addressing myths, and contact-based materials (e.g., stories or a character’s illustrated account). Illustrating this category, P4 stated:

“It was about suicide... ways of supporting people who feel that way, how to help them feel... and that even if they seem happy from the outside, the people who appear happier may not actually be.”

Domain 2: Perceived effects of the application

This domain captured participants’ accounts of the personal impact they attributed to using BreakSi. It included practical takeaways on how to respond in suicide-related situations, increased confidence in their ability to act and to seek help, and shifts in their pre-existing beliefs about suicide. The domain also encompassed emotional responses experienced during or after using the application. Six categories were found: Acquisition of support and communication strategies, Increased self-confidence and willingness to seek help, Changes in beliefs and attitudes toward suicide, Empathy toward others, Positive emotions of relief and hope, and Mild emotional activation related to using the app.

2.1 Acquisition of support and communication strategies (General): Refers to participants’ reports of having gained practical guidance from using BreakSi on how to support and communicate with someone at risk of suicide (i.e., what to say and do, and what to avoid), emphasizing active listening, validation, not minimizing distress,

being present, and facilitating professional help-seeking. For example, one participant (P5) stated:

“Above all, it is important to listen to the person and not tell them that everything will work out, because in that moment, that is not how they feel. Rather, it is about listening and letting them know you are there to listen and help if they need it.”

2.2 Increased self-confidence and willingness to seek help (Typical): Reflects participants’ reports that, after using BreakSi, they felt more confident and more willing to take action by seeking help and/or providing support. Participants described feeling more capable of addressing suicide-related situations, approaching the topic more openly, and paying greater attention to signs of distress. For example, one participant (P5) reported that after using BreakSi, she felt able to talk with a friend who was struggling emotionally:

“I have a friend who went through something like that, so I think the app really helped me talk to her about it. Sometimes it’s scary, and I’d rather avoid the topic, but it’s there. It’s better to talk about it if she needs help.”

2.3 Changes in beliefs and attitudes toward suicide (General): Refers to participants’ reports of cognitive and attitudinal shifts after using BreakSi, such as questioning common myths about suicide, recognizing the role of stigma, viewing suicidal thoughts as more common than they had assumed, and emphasizing the importance of talking about the topic. These changes were reflected in being less judgmental and more open to discussing suicide-related concerns. For example, one participant (P4) linked this shift to reinterpreting a prior family experience:

“It’s a topic I’ve already lived through in my family, and (the application) made me remember it. I see it from another perspective—thinking, ‘Wow, maybe I’ve blamed that person many times, and in the end I don’t have to be blaming them.’”

2.4 Empathy toward others (Variant): Captured ideas indicating that using BreakSi elicited feelings of empathy and concern toward others in suicide-related contexts. In the words of P5:

“I’d say (it made me feel) empathy, especially because of some of the cases they presented [in the application], where people felt very unwell and believed they wouldn’t be able to get better. It made me think it would be good to lend them a hand and tell them that things can improve someday, but that it’s important to seek help.”

2.5 Positive emotions of relief and hope (Variant): Refers to feelings of relief and hope associated with perceiving that the situation can improve and that support is available. In the words of P2:

“It gives me hope to see this app being developed and this kind of work. It shows that people care about the issue and want to improve how it is currently addressed within healthcare.”

2.6 Mild emotional activation related to the content (Variant): Reflects participants’ reports of transient emotional activation elicited by the app (e.g., feeling emotionally stirred or experiencing a low mood), which they described as manageable or self-regulated. For example, one participant (P2) described this experience as follows:

“Because the whole app was about suicide, it stirred me up quite a bit due to personal experiences I’ve had. But I handled it well.”

Domain 3: Usability

This domain captured participants’ accounts of how they experienced the practical use and interaction with BreakSi, including aspects that supported use, difficulties encountered, and suggestions for improvement. This domain comprised six categories: Ease of use, Ease of progression, Navigation flow issues, Engagement-related features, Suggestions for improvement, and Minor technical issues.

3.1 Ease of use (General): Captured participants’ perceptions that the app was easy to use and intuitive, with few or no difficulties during use; most participants endorsed this category.

3.2 Ease of progression (General): Participants described the app’s progression as flexible and gradual, emphasizing that it could be followed at one’s own pace and

adjusted to individual time availability and needs. For example, P5 explained: *“Everything was fine because I could go at my own pace. When I had free time, I moved forward as much as I could.”*

3.3 Navigation flow issues (Typical): This category captured perceived difficulties in the app’s navigation flow, particularly disruptions in continuity between sections. Several participants noted the absence of clear progress indicators and that the app did not preserve their place after completing a module, requiring them to manually re-locate where to resume, which interrupted an otherwise smooth experience. For example, P6 put it as follows:

“[The app] felt easy to use. But, for example, when you finished a section, nothing indicated it. So afterward, you had to remember where you were in order to continue with the next parts.”

3.4 Suggestions for improvement (General): Participants proposed several improvements to the app, including design-related refinements and support-oriented recommendations; however, suggestions primarily focused on enhancing content flow. As P7 highlighted:

“It might be easier if the sections followed on directly (...) rather than having to exit and enter each sub-section.”

3.5 Engagement-related features (Typical): This category captured app features that helped sustain users’ interest and involvement during use (e.g., ease of use, stories, and interest in the topic), making the experience more appealing and enjoyable. For example, one participant (P4) linked their engagement to the use of videos:

“It wasn’t just reading; there were also videos. That made it different. It wasn’t like being given a really long text and thinking, ‘Ugh, I have to read all of this.’”

3.3.5 Discussion

This present study has evaluated the feasibility and qualitative experience using Breaking the Silence (BreakSi), a mobile application designed to reduce suicide stigma, improve suicide literacy, and promote help-seeking in the general population.

Initial reach was strong (199 screening attempts over the two-month recruitment period); however, progression from baseline to app initiation was limited, with 61.0% of baseline completers (94/154) not downloading the app or initiating use, yielding 60 starters. This pre-intervention attrition is common in mobile mental health interventions and is often linked to limited follow-through in downloading and initiating use (Bremer & Sarker, 2023). In this study, early drop-off may be reduced by providing additional, more proactive initial support during download and first navigation to the intervention content. Accordingly, future iterations should identify where drop-off occurs and briefly assess reasons for non-initiation. Among those who initiated the app, 58.3% completed the post-assessment (35/60), a completion rate that appears to exceed those reported in similar online interventions (e.g., Dreier et al., 2023; Kennedy et al., 2020). High attrition and variable engagement are well-documented challenges in mental health mobile applications, even in controlled research settings (Miralles et al., 2020), and this aligns with the broader suicide-prevention digital literature (Jha et al., 2025). Although structured motivational emails were sent during the intervention to support adherence, these may not have been sufficient for all users, highlighting the value of more proactive, early-stage support and of further characterising post-initiation dropout (e.g., timing and reasons) to inform refinements that improve reach and sustained engagement.

It is important to remark that engagement among participants who completed the post-intervention assessment was substantial, with 82.8% completing at least 75% of the app content. Qualitative feedback converged with completion patterns and suggested that, once users entered the program, the experience felt low-effort, approachable, and conducive to reflection. Participants consistently characterized BreakSi as straightforward and comfortable to use, describing the material as

engaging and thoughtfully paced. They also highlighted the use of relatable examples (i.e., indirect contact), which helped sustain interest and made the content feel more personally engaging. Several participants further noted that the app went beyond delivering information by prompting reflection and encouraging reconsideration of suicide stigma, including challenges to specific misconceptions and myths, which may help explain continued engagement across the content. Finally, participants often framed BreakSi as having broader preventive value, emphasising its potential to raise awareness and support more helpful responses when someone experiences suicidal ideation. Critically, the literature suggests that reducing suicide stigma can lower barriers to help-seeking and enable more timely, supportive responses (WHO, 2021a; Wyllie et al., 2025)

Participants also reported practical barriers that may have limited continued use, most commonly lack of time and forgetting, both frequently reported challenges in app-based and other digital interventions (Borghouts et al., 2021; Wisel et al., 2019). This aligns with the more mixed perceptions of BreakSi's everyday usefulness: when users perceive less immediate everyday value, they may be less likely to prioritise the intervention and engage consistently, in line with evidence linking expectancy to engagement in digital interventions (Zainal et al., 2026). In addition, participants pointed to a navigation-flow limitation: the app did not clearly indicate which sections had already been completed and which remained, making it harder to track progress and resume use efficiently. One suggestion to consider, raised by a participant, was to shorten or consolidate some content sections to simplify progression and help users move through the program more smoothly. These findings point to clear, modifiable targets for optimisation, particularly around progress visibility and ease of resuming use. Addressing such factors is consistent with broader evidence on determinants of engagement with health apps and may help improve adherence in a future trial (Szinay et al., 2020).

Additionally, safety was prioritised given the sensitivity of suicide-related content (Sherekar & Mehta, 2025). High-risk participants were excluded, and any endorsement of suicidal ideation prompted clear information about seeking help and

access to specific support resources. Therefore, most users reported feeling supported throughout the program despite its fully online delivery. Participants' feedback also suggested that emotional responses were generally manageable, with only occasional, transient activation that users described as self-regulated. Consistent with these perceptions, no statistically significant changes were observed in anxiety symptoms or suicidal ideation from pre- to post-intervention. Depressive symptoms showed a small but statistically significant reduction over the same period.

Likewise, this study revealed certain exploratory trends across the primary outcomes, which should be interpreted cautiously in a single-arm feasibility design. In SOSS scale, a statistically significant decrease in suicide glorification/ normalisation beliefs was observed. This is particularly important because this conception of suicide has been highlighted as a potential unintended effect of some anti-stigma approaches, as reported in similar programs (Kennedy et al., 2020; Perceval et al., 2020). Accordingly, this potential adverse outcome was explicitly considered in developing BreakSi's content, given evidence that such beliefs can reduce help-seeking (Oexle et al., 2022b). Notably, prior exposure to suicide has been identified as a potential moderator of intervention effects, with those without previous exposure showing larger and more sustained attitudinal changes (Rogers et al., 2018). Although the present sample was insufficient for formal moderation testing, future analyses in the full RCT should examine whether exposure status moderates change in this domain specifically.

Regarding stigma subscale, the results showed only a small reduction, a pattern commonly reported in comparable interventions (Bond et al., 2021; Dreier et al., 2023; Williams & Witte, 2017). A recent study by Oexle and colleagues (2025) offers a useful interpretation, suggesting that suicide-related attitudes may be especially persistent and closely tied to deeply held personal values, including beliefs about life and death and religious views. This aligns with previous work showing that religious beliefs can shape suicide stigma (Pierantonelli et al., 2024), and with broader evidence linking suicide attitudes to underlying value-based frameworks (Lannin et al., 2020; Norman et al., 2008). This perspective was considered in the development of the

content of BreakSi; accordingly, participants often articulated value-consistent commitments reflecting a less judgmental and more empathic stance toward suffering, which may represent an important precursor to broader attitudinal change. Moreover, the smaller change observed on the stigma subscale may partly reflect what this measure captures—namely, endorsement of negative descriptors attributed to people who die by suicide—rather than shifts in participants’ attitudes and intended responses. Encouragingly, these more proximal, behaviourally oriented changes were more clearly reflected in the qualitative data, with participants describing concrete intentions such as listening without judgement, showing empathy, and engaging in more open conversations about suicide (e.g., “showing empathy and trying to understand what is happening”).

Regarding the scores in isolation/depression subscale also declined, suggesting a promising shift in common misconceptions. This may relate to BreakSi’s emphasis that suicidal ideation and behaviour are not confined to people with diagnosed mental health problems and that distress is often hidden rather than overtly visible. While depression is a common correlate, suicidality is multifactorial and shaped by a broader range of interpersonal and social determinants, so challenging a reductive view that frames suicidality as primarily a manifestation of depression or other diagnosed mental disorders may support a more accurate understanding (García-Haro et al., 2019; Pirkis et al., 2023).

Suicide literacy patterns suggested a meaningful improvement in overall knowledge, with an increase of roughly 10 percentage points in correct responses. Gains were most evident in understanding the causes/nature of suicide and its risk factors, which aligns with BreakSi’s strongest educational emphasis. In contrast, knowledge of warning signs did not show a clear shift on the quantitative subscale. Notably, however, participants’ values-based commitments often reflected an intention to strengthen their preparedness by actively seeking reliable information and becoming more attentive to warning signs, suggesting emerging learning goals that may not be fully captured by brief knowledge subscales at this stage. Importantly, improving suicide literacy may have wider benefits: as consistent evidence links lower

literacy with greater suicide stigma, the knowledge gains observed here may be relevant for stigma-related outcomes (Batterham et al., 2013a; Ludwig et al., 2021; Jahan et al., 2023). In turn, improved literacy has also been associated with more favourable orientations toward professional help-seeking (Calear et al., 2014; Cruwys et al., 2018). This underscores the potential broader value of these improvements observed in this study.

Finally, regarding help-seeking intentions, trends suggested a slight increase in both formal and informal sources, although these changes were small and uncertain in this feasibility sample, consistent with previous interventions reporting limited short-term movement in help-seeking outcomes (Jones et al., 2020; Takahashi et al., 2023). It is also worth noting that the GHSQ-Formal subscale employed here comprises only two items (helplines and mental health services), which may limit its sensitivity to detect meaningful change in a general-population sample characterised by low current clinical severity and minimal personal need for formal help. Future evaluations should consider expanding the range of formal sources assessed and complementing intentions with attitudinal measures and, where feasible, behavioural indicators of actual help-seeking.

Findings from Grosselli et al. (2024), where changes were clearer at follow-up than immediately post-intervention, are consistent with the possibility that shifts in help-seeking intentions may emerge more fully over longer timeframes. This may also reflect the general-population context of the sample, where personal need for help-seeking is often low, making large short-term shifts less likely. Notably, participants' accounts pointed to a related shift toward greater readiness to support others (e.g., *"Be willing to listen if needed, discuss the issue, listen without judging"*). Participants' action commitments frequently centred on being present and listening supportively, and on offering accompaniment and reassurance as concrete ways of helping others. This was echoed in interview accounts, where participants described acquiring practical communication and support skills, including active listening, validation, and encouraging professional help when needed. They also reported increased confidence to address suicide-related situations and, for some, greater willingness to

seek help themselves if needed, suggesting a potential increase in perceived capability to act. These findings are particularly relevant and align with literature highlighting the benefits of training the general population for suicide prevention, especially through improvements in knowledge, preparedness to act, and self-efficacy (Lui et al., 2025). Likewise, a recent study by Alves Dos Santos Bezerra and colleagues (2026) suggests that empathy or knowledge alone may be insufficient; for empathic concern to translate into helping actions, people need to feel confident in their knowledge and perceive that they know how to act, a pattern that is consistent with the indications observed in our study.

Overall, the feasibility results point to clear, modifiable priorities for optimisation before controlled evaluation. Uptake appears to be the central bottleneck, supporting a streamlined, more intuitive first-use experience. Additionally, among those who start, continued engagement may be strengthened by improving progress visibility and ease of resuming use. Finally, selectively shortening or consolidating specific sections may facilitate smoother progression without compromising core educational and reflective components. Addressing these targets should increase reach and sustained engagement.

Findings suggested good acceptability among participants who engaged with the intervention: users rated the app as clear and easy to use, and most reported adequate resources and digital skills. Reported barriers during use mainly reflected everyday constraints (e.g., limited time, forgetting) rather than technical or connectivity issues. Exploratory pre-post trends also indicated potential improvement in some target domains (particularly suicide literacy and specific stigma dimensions), while changes in help-seeking intentions appeared smaller and should be interpreted cautiously given the single-arm feasibility design.

The present findings should be interpreted in light of several limitations. First, the sample was relatively small, and the study used a single-arm feasibility design, which precludes causal inference and limits the conclusions that can be drawn about effectiveness. Moreover, low and uneven engagement with the app may have

attenuated observable pre–post changes, potentially underestimating effects on some outcomes. Second, as is common in many digital interventions (Potts et al., 2025), participants were predominantly young women, potentially with higher digital literacy and greater comfort with mobile interventions, which may limit generalisability to other demographic groups. In addition, the absence of follow-up assessments prevents conclusions about the durability of changes over time.

Taken together, feasibility results from this mixed-methods study support moving forward with BreakSi as a line of research, providing preliminary evidence of the intervention’s utility. Importantly, to our knowledge, this is among the first evaluation of feasibility and acceptability for a suicide stigma–focused mobile application in a Spanish-speaking context. The findings also provide a practical foundation for iterative optimisation of the intervention and its delivery prior to confirmatory testing. Accordingly, the next step is to evaluate BreakSi using a controlled design with follow-up to more rigorously examine outcomes, sustainability, and reach. Ultimately, reducing suicide stigma is a core public health target because it can lower barriers to help-seeking and enable earlier, more supportive responses, which are key pathways for suicide prevention.

Study 4:

Breaking the Silence: Randomized Controlled Trial Protocol of a Mobile Application to Reduce Suicide Stigma, Improve Literacy, and Promote Help-Seeking.

This chapter is currently under review as: Pierantonelli, M., Mira, A., Escrivá-Martínez, T., Diego-Pedro, R., Desdentado, L., & Baños, R. M. (2026). Breaking the Silence: Randomized Controlled Trial Protocol of a Mobile Application to Reduce Suicide Stigma, Improve Literacy, and Promote Help-Seeking.

3.4.1 Background

Suicide is a major global public health crisis, responsible for over 700,000 deaths each year and ranking among the leading causes of death in individuals aged 15 to 29 years (World Health Organization [WHO], 2025). Rates vary across countries and are often disproportionately higher in low- and middle-income nations. However, the true magnitude of suicide is underestimated due to underreporting and misclassification (Lovero et al., 2023; Snowden & Choi, 2020). Mortality figures also conceal the much larger number of people affected by suicidal thoughts and behaviours, as suicide attempts substantially outnumber suicide deaths worldwide (WHO, 2021a). Crucially, stigma (particularly self-stigma and fear of rejection) prevents many individuals from seeking help, further limiting accurate reporting and timely intervention (Thornicroft et al., 2022).

Suicide stigma refers to the negative attitudes, beliefs, and behaviours directed at individuals experiencing suicidal thoughts or behaviours. This form of stigma often manifests through perceptions that associate suicidal behaviour with selfishness, weakness, or moral failure (Carpiniello & Pinna, 2017; Ludwig et al., 2020a). These views lead to public rejection, discrimination, and social exclusion (Schomerus et al., 2015; Sheehan et al., 2017a). This public stigma can also be internalized, resulting in self-stigma, whereby individuals adopt these negative beliefs and direct them toward themselves. Such internalization has been linked to reduced self-esteem, heightened shame, and increased psychological distress (Carpiniello & Pinna, 2017; Scocco et al., 2016). Suicide attempt survivors often endure both the general stigma of mental illness and the specific stigma of suicide, further heightening vulnerability (Oexle et al., 2018). Importantly, stigma extends beyond the individual to affect families and close others, fostering a cycle of silence and distress (Fulginiti & Frey, 2018; Hanschmidt et al., 2016). As a socially constructed process with cognitive, emotional, and behavioural components, suicide stigma is increasingly recognized as a critical barrier to prevention efforts and help-seeking behaviours (Ottati et al., 2005; Reynders et al., 2014; WHO, 2021a).

Recognizing stigma as a relevant barrier to suicide prevention, several organizations recommend including specific actions to reduce it in suicide prevention plans and guidelines, to minimize its negative effects and enhance preventive strategies (O'Connor & Pirkis, 2016; Ministerio de Sanidad [Gobierno de España], 2025; WHO, 2021a). The literature shows that suicide literacy is a key protective factor, consistently associated with lower stigma across cultures (Jahan et al., 2023; Ludwig et al., 2021), as well as better recognition of warning signs and a greater willingness to seek help (Reavley & Jorm, 2012; Jafari et al., 2025). Additionally, individuals within informed social networks are more likely to be encouraged to seek professional help rather than rely solely on self-help strategies (Cruwys et al., 2018).

In line with these concerns, recent intervention programs have aimed to improve this literacy and reduce suicide-related stigma, showing modest but promising effects on public attitudes, self-stigma, mental health literacy, and help-seeking (Perceval et al., 2020; van der Burgt et al., 2021; Wright-Berryman et al., 2022). Most interventions have relied on educational approaches (aimed at improving knowledge and correcting misconceptions) and indirect contact-based strategies (such as exposure to lived-experience narratives), both of which have shown effectiveness in reducing suicide-related stigma (Corrigan et al., 2001; Rogers et al., 2018). However, although these interventions often produce short-term improvements in stigma and knowledge, maintaining these effects over the long term has proven difficult (Torok et al., 2017).

Beyond education and indirect contact, cognitive-based strategies have also shown promise in reducing stigma (Meaney & Rieger, 2021; Xu et al., 2017). Furthermore, psychological intervention frameworks such as Acceptance and Commitment Therapy (ACT; Hayes et al., 1999, 2012) have demonstrated promising results in anti-stigma strategies, targeting psychological inflexibility—a process implicated in both self- and public stigma—and fostering acceptance, perspective-taking, and values-based action (Hayes et al., 2004; Krafft et al., 2018).

However, anti-stigma efforts still tend to prioritise educational and cognitive targets, while comparatively fewer interventions are explicitly designed to shift discriminatory behaviour and everyday social interactions (Ashton et al., 2018; Clay et al., 2020). Values-based interventions may help address this gap by fostering awareness of personally meaningful principles, especially those linked to compassion, empathy, and social responsibility. Acting in line with one's values has been associated with greater well-being and can enhance motivation and adherence to behavioural change (Chrystal et al., 2019; Maio et al., 2001). In the context of suicide prevention, encouraging individuals to reflect on whether their daily actions align with their values and to commit to value-congruent behaviours may represent a promising pathway to reduce stigma and promote sustained changes in attitudes and conduct.

The literature shows that the studies regarding anti-stigma interventions face important methodological limitations, including the absence of RCTs, short follow-up periods, and frequent reliance on self-report measures, all of which limit internal validity and increase the risk of bias (Bond et al., 2021; Rogers et al., 2018; Sheehan et al., 2023). Selection bias is also common, often resulting in non-representative samples, and some studies have reported unintended effects, such as increased social distance or the glorification of suicide (Grosselli et al., 2024; Kennedy et al., 2020; Perceval et al., 2020). These findings highlight the need for more rigorous and ethically sound evaluations of anti-stigma interventions.

It is noteworthy that several anti-stigma programs have been delivered fully online (e.g., Rogers et al., 2018; Kennedy et al., 2020; Dreier et al., 2023), leveraging advantages of digital formats such as accessibility, personalization, and anonymity, which are particularly valuable for individuals reluctant to seek help (Schueller & Torous, 2020; Corrigan et al., 2012). Moreover, these platforms can reach large audiences and support population-level attitude change through scalable public education efforts (Clement et al., 2012; Thornicroft et al., 2016). Yet, to date, none have utilized a dedicated mobile application as their primary delivery platform. Evidence from digital health research shows that delivery modality—web versus app—can substantially alter user engagement patterns (Morrison et al., 2018), underscoring the

importance of evaluating app-based anti-suicide-stigma interventions in their own right.

In this context and given the paucity of anti-suicide-stigma mobile applications, we have developed Breaking the Silence (BreakSi – Rompiendo el Silencio; RomSi in Spanish), a self-guided smartphone application designed to reduce suicide-related stigma, improve suicide literacy, and foster help-seeking. The app combines education with indirect contact through lived-experience testimonials—two strategies that have consistently demonstrated positive effects on reducing stigma—while also incorporating components aimed at promoting cognitive flexibility and alignment with personal values, which remain largely unexplored in suicide stigma interventions.

Specifically, the study will aim to: (a) examine whether the intervention reduces suicide-related stigma (public and self/personal), improves suicide literacy, and increases help-seeking intentions; (b) evaluate the maintenance of intervention effects at 1- and 3-month follow-ups; (c) analyse mediators of intervention-related change in the primary outcomes; (d) investigate whether clinical and demographic variables moderate the effects of the intervention on primary and secondary outcomes; and (e) assess the usability, acceptability, and satisfaction with the app through both quantitative and qualitative methods.

We hypothesize that participants who complete BreakSi will demonstrate greater increases in suicide-related knowledge and help-seeking intentions, along with greater reductions in suicide stigma, compared to those who have not yet received the intervention. We also expect these gains to be maintained at both follow-up assessments. In addition, we will find some potential mediators and moderators of intervention-related change. Finally, we expect participants to rate the app as usable, acceptable, and satisfactory.

3.4.2 Methods

Study design

The study is a two-arm RCT with a crossover design. Participants will be randomly assigned (1:1) to immediate (iApp) or delayed (dApp) access to the intervention. Randomization will be stratified by baseline stigma levels on the Stigma of Suicide Scale – Short Form (SOSS-SF; Batterham et al., 2013b) stigma subscale to ensure balance across groups, given the central role of this construct in the study outcomes. The stratification cut-off will follow the median stigma score reported by Pierantonelli et al. (2024) in a large Spanish-speaking sample. The corresponding dataset has been deposited in the Open Science Framework (OSF; <https://osf.io/ketrn/>), ensuring transparency and reproducibility. A computer-generated randomization list will be created before recruitment, guaranteeing equal allocation within each stratum.

The study flow chart is illustrated in Figure 1. Participants will complete five assessments. At Time 0 (T0), both groups will complete a baseline assessment. The iApp group will then begin a 10-day app-based intervention, followed by a post-intervention assessment at Time 1 (T1ⁱ). After a 10-day no-app period, they will complete a follow-up at Time 2 (T2ⁱ), and two additional follow-ups at one month (T3ⁱ) and three months (T4ⁱ) after T1ⁱ.

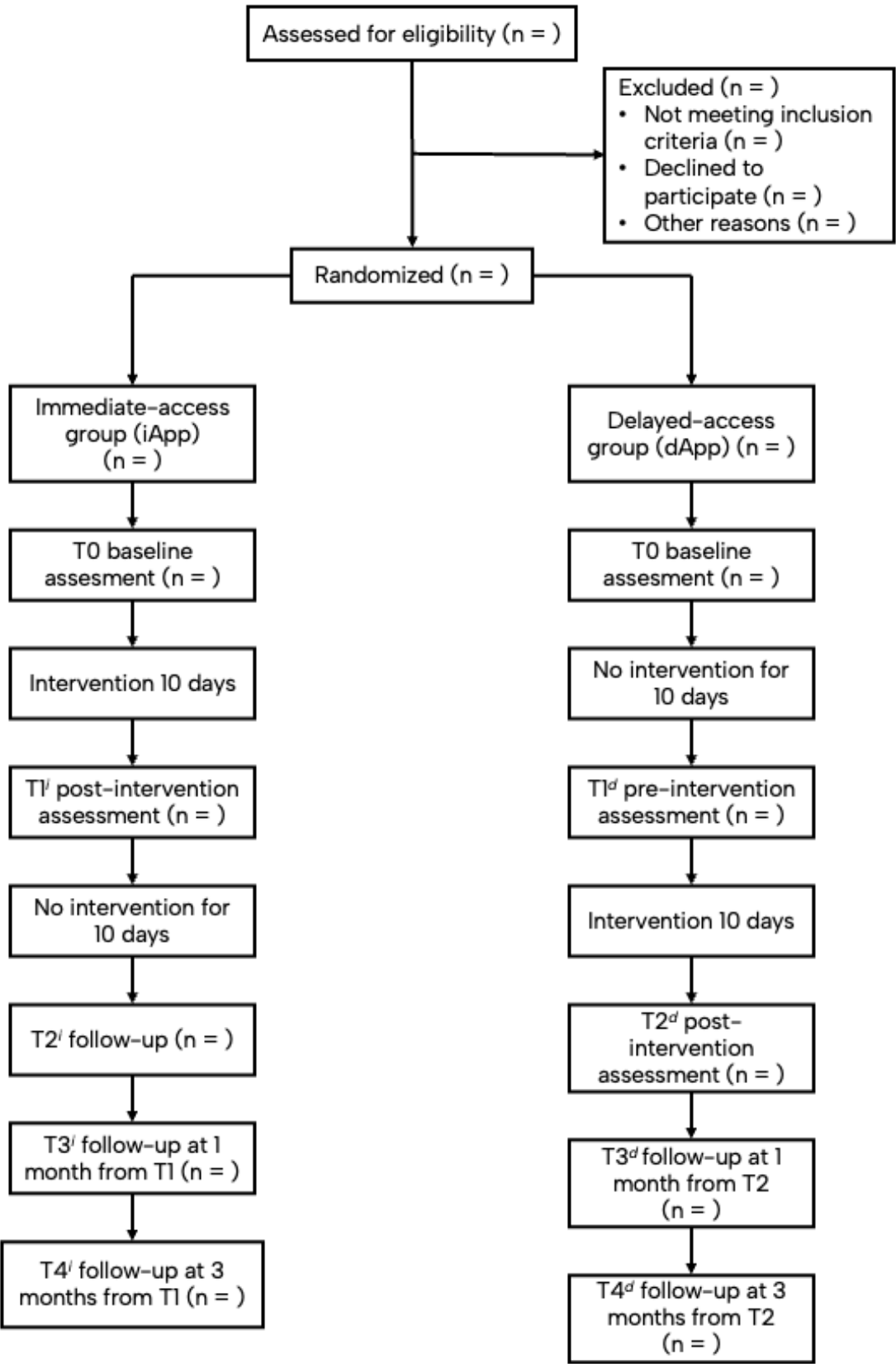
In parallel, the dApp group will complete a 10-day waiting period after T0, followed by a second baseline assessment at T1^d (pre-intervention assessment). They will then complete the 10-day intervention, after which a post-intervention assessment will be conducted at Time 2 (T2^d), followed by two follow-ups at one month (T3^d) and three months (T4^d) after T2.

A daily assessment protocol will be implemented equally across groups, limited to the 10-day active intervention period, to complement primary outcome assessments.

This trial has been registered at ClinicalTrials.gov (identifier: NCT06759129) and adheres to the Consolidated Standards of Reporting Trials (CONSORT) 2025 statement (Hopewell et al., 2025). The study was approved by the Ethics Committee of the University of Valencia (Valencia, Spain) on October 3, 2024, under protocol number 2024-PSILOG-3563219.

Fig. 1.

Design Flowchart



Sample and Recruitment

Participants will be recruited through media announcements posted on the social media profiles of the research group and team members (e.g., Instagram, Facebook, LinkedIn). Local collaborators will also be encouraged to share the study on their platforms to increase reach. Given the online format, participants may join from various Spanish-speaking countries.

To reduce social desirability bias and avoidance of suicide-related content, the study will be presented as “an opportunity to reflect on beliefs and attitudes about mental health,” with no explicit references to suicide or stigma in recruitment materials. All procedures will be explained in writing, with email contact available for questions. The study will be conducted entirely online

Eligible participants will be 18 years of age or older (with no upper age limit), fluent in written and spoken Spanish, have regular access to a smartphone with an Internet connection, possess sufficient digital literacy to use a mobile application, and have a valid email address. Participants must also express willingness to provide informed consent and complete all study assessments. Exclusion criteria will include: (a) high suicide risk, defined as a total score of 21 or more on the Suicidal Ideation Attributes Scale (SIDAS; Van Spijker et al., 2014; Pierantonelli et al., 2024), or a score between 7 and 10 on item 3 of the same scale, which assesses proximity to a suicide attempt; and (b) high social desirability bias, operationalized as a score equal to or greater than 14 on the Marlowe-Crowne Social Desirability Scale (MC-SDS; Crowne & Marlowe, 1960; Gutiérrez et al., 2016). All participants reporting any level of suicidal ideation on the SIDAS will receive information about specialized mental health services, a structured help-seeking guide via email, and active encouragement to seek professional support.

Sample Size

Sample size was estimated a priori using G*Power 3.1 (Faul et al., 2007), based on previous randomized trials evaluating digital interventions targeting suicide

stigma (e.g., Bond et al., 2021; Dreier et al., 2023). Power analysis indicated that a total of 134 participants would be required to achieve 80% power, with an alpha level of 0.05, to detect a moderate effect size ($f = 0.30$) in a repeated-measures ANOVA framework with five assessment points. Assuming an attrition rate of 30%, which is common in digital mental health studies, the required sample increases to 174 participants (87 per group).

Intervention

The intervention is named Breaking the Silence (BreakSi), referred to as Rompiendo el Silencio (RomSi) in Spanish. It is a fully online, mobile-based intervention targeting the general population. BreakSi combines educational, cognitive, and indirect contact strategies with reflective, experiential, and value-oriented components to promote mental health literacy, reduce suicide-related stigma, and enhance intentions to help others and seek professional help.

The content was developed based on existing interventions addressing mental health stigma, with particular attention to those specifically targeting suicide stigma. In addition, development was guided by established communication principles and best-practice recommendations for safely addressing suicide-related topics in digital formats, as well as by general guidelines for the design of anti-stigma interventions (López-Vega et al., 2022; Muñoz et al., 2020).

BreakSi is conceptually grounded in four evidence-informed components — education, interpersonal contact, cognitive flexibility, and values— that reflect key theoretical and experiential pillars shown to reduce mental health stigma. These components guide the content and delivery of the intervention, which is structured into four thematic sections. Table 1 provides an overview of these sections, their association with the different components, and the specific content addressed in each. For a detailed description of the content included in each BreakSi section, see Study 4 Annex. Additionally, a demonstration video of the application is available at the [following link](#) (see the Study 4 Annex for alternative access options).

Table 1.*Overview of the Breaksi Content Structure by Section and Component*

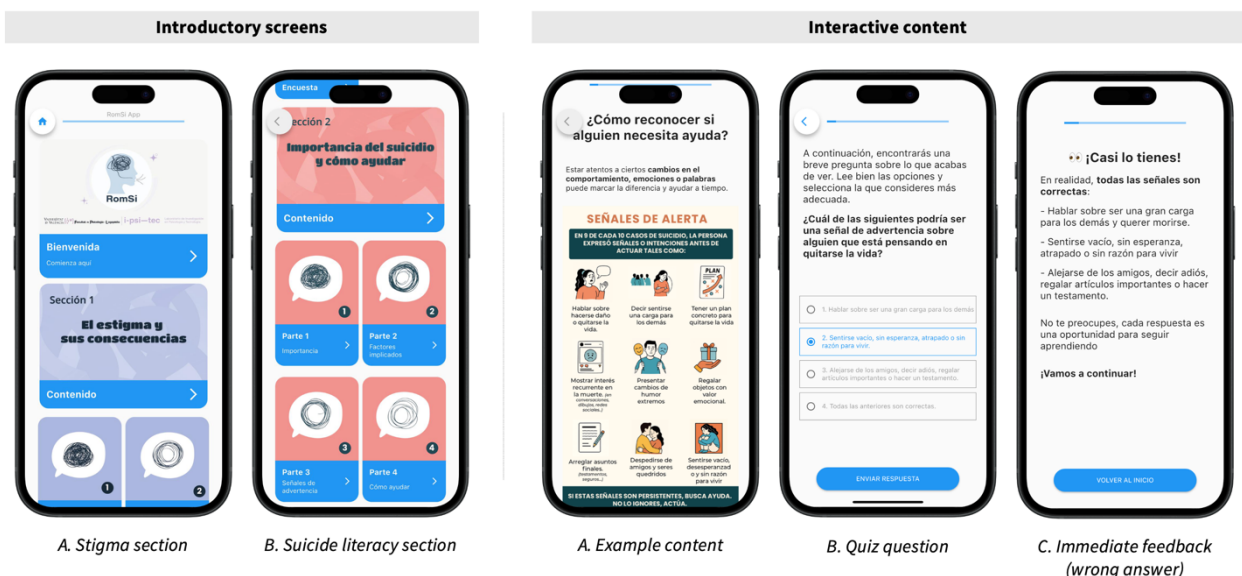
Section	Component	Content
Section 1: Suicide stigma and its consequences	Education	• What is suicide stigma, and how does it affect us? • How does it arise, and how can we change it?
Section 2: Importance of suicide and how to help	Education	• Suicide and its prevalence • Risk and protective factors • Warning signs • How to help?
Section 3: Myths about suicide and their impact	Cognitive flexibility	The 10 most common myths about suicide • Myths 1 & 2 ("Suicide cannot be prevented" and "People with suicidal ideation or behavior want to die") • Myths 3 & 4 ("Everyone who dies by suicide or attempts it has a mental disorder" and "Suicide could always have been prevented if others had paid more attention") • Myths 5, 6 & 7 ("Suicide attempts are just an exaggerated way to get attention", "Those who talk about suicide won't actually do it" and "If someone really wants to die by suicide, they won't say anything") • Myths 8, 9 & 10 ("People who attempt or die by suicide are cowards (or brave)", "Only mental health professionals can prevent suicide" and "Talking about suicide increases the risk")
Section 4: The impact of suicide myths on personal values	Values	• What are values? • Acting in alignment with our values • Moving into action

Education component

Education is a widely used and effective strategy to reduce mental health stigma (Hajizadeh et al., 2024), and higher suicide literacy has been linked to lower stigma and increased help-seeking (Jahan et al., 2023). Educational content is delivered through two sections: one focused on stigma and the other on suicide-related knowledge. The stigma content highlights how language and cognitive processes contribute to the development and persistence of rigid and stigmatizing beliefs. Rather than confronting these beliefs directly, the intervention encourages participants to observe them with openness and develop more flexible, nonjudgmental ways of understanding suicidal experiences (Hayes et al., 2004). The second section provides accessible, evidence-informed information on suicide, covering key aspects of suicide literacy, with an emphasis on how to recognize warning signs, communicate supportively, and avoid common unhelpful responses. All content was developed following established guidelines and recommendations for suicide prevention (e.g., WHO, 2021a). Figure 2 illustrates examples from the Education module, including introductory screens and interactive quiz content.

Fig. 2.

Example Screenshots from the Education Component of the BreakSi App

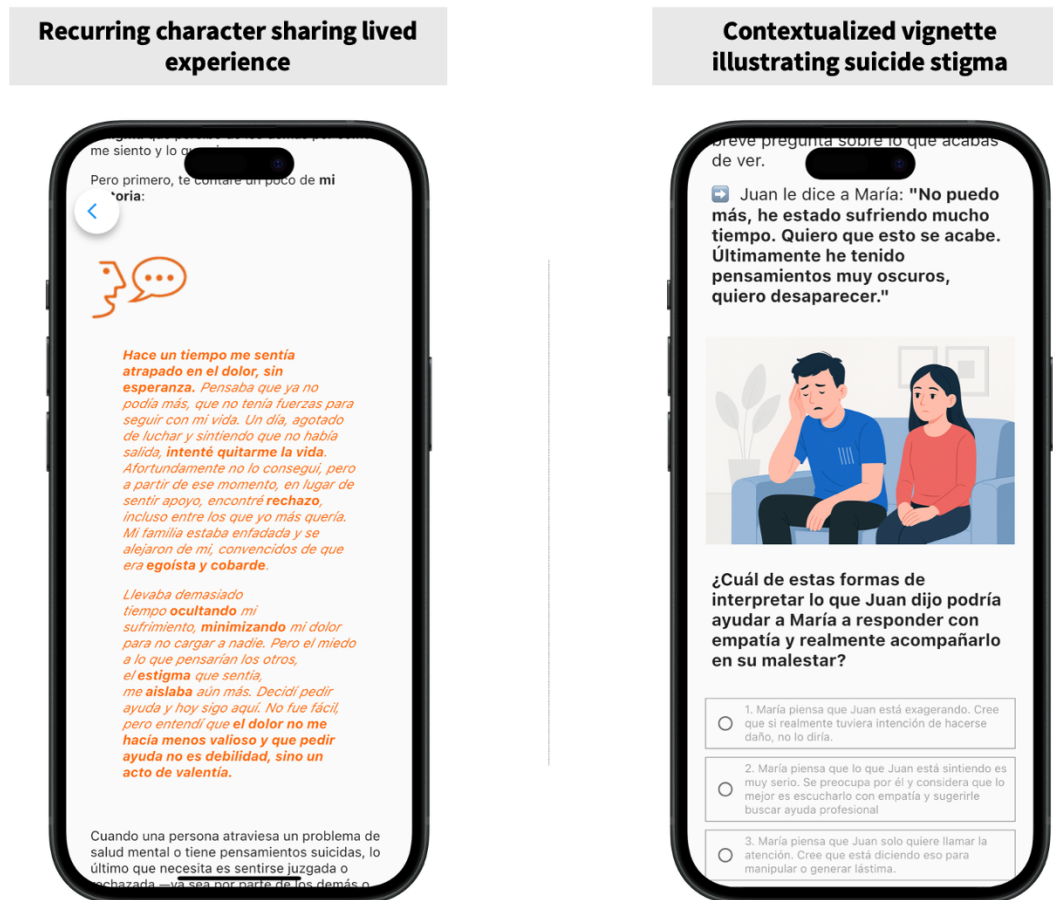


Indirect contact component

Contact-based strategies are among the most effective approaches for reducing stigma, especially when they include individuals with lived experience (Thornicroft et al., 2022). Indirect forms of contact, such as video or narrative formats, have also proven to be effective and easier to disseminate at scale (Kennedy-Hendricks et al., 2022; Reinke et al., 2004). In BreakSi, contact is integrated throughout the entire intervention rather than delivered in a standalone section. It is implemented through two complementary narrative strategies. First, a recurring character appears across different parts of the app via dialogue bubbles, offering brief reflections and personal insights that directly relate to the themes being addressed, for example, the difficulty of talking about suicidal thoughts due to stigma. Second, contextualized vignettes depict everyday situations involving individuals with suicidal ideation or behavior, as well as their family members and close others. All narratives are based on real-life experiences and are designed to foster emotional connection, challenge stereotypes, and humanize the experience of suicide. Figure 3 provides examples from this component, illustrating the use of a recurring character and contextualized vignettes to convey lived experiences.

Fig. 3.

Example Screenshots from the Indirect Contact Component of the BreakSi App



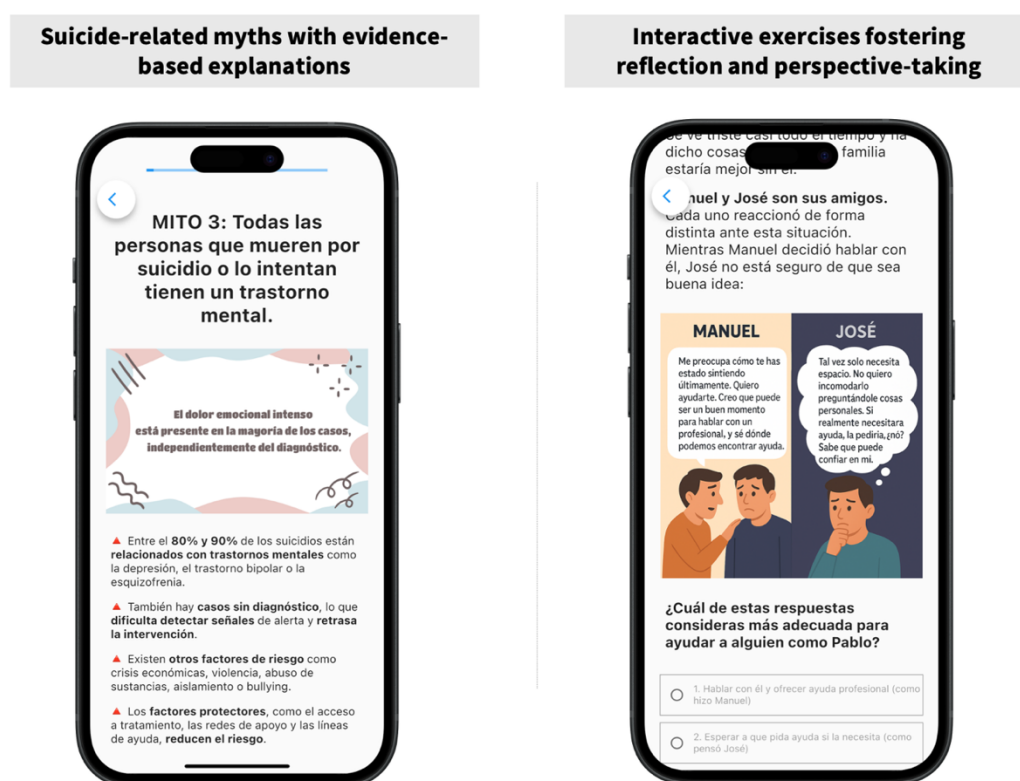
Cognitive flexibility component

Cognitive restructuring strategies have shown effectiveness in various stigma-reduction interventions (Clement et al., 2015; Griffiths et al., 2014). This element of the intervention is designed to help participants respond more adaptively to discomfort and inner conflict when engaging with suicide-related content. Through metaphors, paradoxes, and interactive vignettes, users are encouraged to notice the pull of stigmatizing thoughts without reacting automatically, and to explore alternative, more nonjudgmental interpretations of those experiences. The 10 most common myths about suicide are addressed using a dual approach: concise, evidence-based explanations that counter each belief, and experiential exercises that foster reflection

and perspective-taking. For example, one task addresses the widespread myth that “people who talk about suicide won’t do it”, inviting participants to consider the potential consequences of holding such a belief and to explore more flexible, supportive ways of responding. By working through emotionally relevant scenarios, participants are supported in moving from rigid judgments to more flexible and constructive patterns of thought and behavior. Figure 4 shows examples from the Cognitive Flexibility component.

Fig. 4.

Example Screenshots from the Cognitive Flexibility Component of the BreakSi App

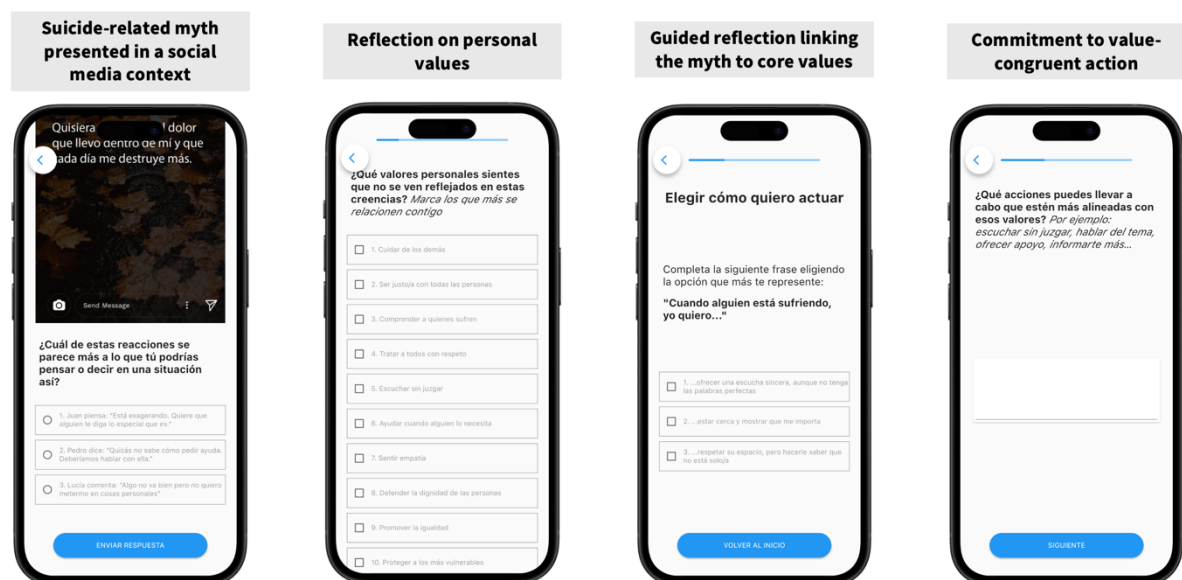


Values component

Building on evidence that values-based action promotes well-being and fosters behavioural change (Bojanowska et al., 2022), this final component encourages participants to reflect on personally meaningful principles —particularly those related to compassion, empathy, and social responsibility —and to examine how their current behaviours align with them. To facilitate this process, short vignettes revisit suicide-related myths as they may appear in everyday contexts (e.g., social media posts, casual conversations), encouraging recognition of possible inconsistencies between values and actions. Through guided reflection, participants are then invited to commit to a specific value-congruent action that embodies these principles in daily life. This closing task is intended to enhance intrinsic motivation and support the long-term integration of behavioural change. Figure 5 shows examples from the Values component.

Fig. 5.

Example Screenshots from the Values Component of the BreakSi App



The material is presented through interactive cards that combine audiovisual resources, self-reflection exercises, and short quizzes (See Figures 2-5). Each card includes reflection-based tasks designed to consolidate learning and promote

personal engagement with the material. These may involve multiple-choice questions, realistic scenarios, or decision-making tasks, each followed by immediate, tailored feedback to enhance understanding and self-awareness.

Procedure

After completing the baseline assessment, participants receive an email from the research team with instructions to download the app and begin the intervention. All study assessments (T0–T4) will be administered online via Qualtrics.

Participants are encouraged to complete the app content within 10 days; however, they are allowed to progress at their own pace and take additional time if needed. At the end of each section, they are prompted to complete a brief survey assessing suicide stigma and an open-ended feedback item.

Daily assessments are collected once per day during the 10-day intervention period via m-Path notifications sent at 19:00. If unanswered, a reminder is sent at 22:00, and the survey expires at midnight. Additionally, motivational emails are sent on days 4 and 8 to support engagement and maintain contact with participants. Their content is adapted to each participant's progress—reinforcing commitment when adherence is adequate or reactivating motivation when engagement declines. This strategy provides brief, structured support aimed at sustaining adherence throughout the intervention (Mira et al., 2017).

Participants are informed that the program is part of a research study and does not replace psychological treatment. Each module and study email includes general information on where to seek help in the event of suicidal ideation or behaviour. If any level of suicidal ideation is detected, participants are contacted by email and encouraged to seek professional support.

Measures

Sociodemographic information is collected at the beginning of the study, including participants' age, gender identity, education level, employment status,

religious beliefs, and other relevant variables. Participants are also asked whether they know where to access psychological help in case of suicidal ideation or behaviour.

Additionally, they are asked whether someone in their environment has died by suicide, how close that relationship was, and the emotional impact of the loss. This question aligns with Cerel et al.'s (2014) continuum of suicide survivorship, which highlights the relevance of assessing not only exposure to suicide but also perceived closeness and subjective impact.

In addition, participants complete the Spanish short form of the Marlowe-Crowne Social Desirability Scale (MC-SDS; Crowne & Marlowe, 1960; Gutiérrez et al., 2016) at baseline. This 18-item true/false scale assesses the tendency to respond in a socially desirable manner and has shown adequate internal consistency in Spanish adults ($\alpha = .80$).

Validated self-report instruments are used to assess the primary and secondary outcomes. A full overview of the assessment schedule is provided in Study 4 Annex.

Primary outcomes

Stigma of Suicide Scale – Short Form (SOSS-SF). The SOSS-SF (Batterham et al., 2013b) is a 16-item scale that assesses agreement with common descriptors of a “typical” person who dies by suicide. Items are rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The original scale supports a three-factor structure—Stigma (8 items), Glorification/Normalization (4 items), and Isolation/Depression (4 items)—and shows good psychometric properties. The Spanish version confirmed the three-factor structure, demonstrated measurement invariance across gender, and showed good internal consistency ($\omega = .67-.86$) in Spanish-speaking samples (Pierantonelli et al., 2024).

Literacy of Suicide Scale – Short Form (LOSS-SF). The LOSS-SF measures knowledge about suicide across four domains: signs and symptoms, causes and

nature, risk factors, and prevention and treatment. Items are answered as “true,” “false,” or “don’t know,” with correct responses scored as 1. Total scores range from 0 to 12, with higher scores indicating greater literacy. The 12-item original version showed robust psychometric properties (Calear et al., 2022). This study uses the 10-item Spanish adaptation, which showed good model fit, strong item discrimination, and gender invariance in a large Spanish-speaking sample (Pierantonelli et al., 2024).

General Help-Seeking Questionnaire (GHSQ). Help-seeking intentions are measured using the GHSQ (Wilson et al., 2005). Participants indicate how likely they would be to seek help from various sources (e.g., partner, family member, friend, mental health professional) if experiencing suicidal thoughts. Items are rated on a 7-point Likert scale (1 = extremely unlikely to 7 = extremely likely), with higher scores indicating stronger help-seeking intentions. The GHSQ has demonstrated good internal consistency and construct validity across populations, including evidence from Spanish-speaking samples (e.g., Pacheco del Castillo, 2017)

Secondary outcomes

Personal Suicide Stigma Questionnaire (PSSQ). The PSSQ is a 16-item self-report scale that assesses personal stigma related to suicidality across three dimensions: rejection, minimization, and self-blame (Rimkeviciene et al., 2019). It is administered only to participants reporting current suicidal ideation. Items are rated on a 5-point Likert scale, with high internal consistency ($\alpha = .95$). In this study, we use the version that includes a “not applicable” (NA) option for items assuming disclosure of suicidality. This format improves response accuracy without compromising the scale’s psychometric properties (Rimkeviciene et al., 2021). When the NA option is selected for all items within the rejection and minimization subscales, scores for those dimensions are not computed, as they assess perceived and experienced stigma contingent on disclosure.

Clinical variables

Suicidal ideation will be evaluated using the Suicidal Ideation Attributes Scale (SIDAS; van Spijker et al., 2014; Pierantonelli et al., 2024), a 5-item measure covering frequency, controllability, closeness to attempt, distress, and interference with daily life during the past month. Responses are given on an 11-point Likert scale (0–10), with higher scores indicating greater severity. The Spanish version has shown adequate psychometric properties, including good model fit and acceptable internal consistency ($\omega = 0.73$).

In parallel, depressive symptoms will be assessed using the Patient Health Questionnaire-9 (PHQ-9; Spitzer et al., 1999; Diez-Quevedo et al., 2001), a 9-item self-report scale based on DSM criteria for major depressive disorder. Items are rated on a 4-point Likert scale (0 = “not at all” to 3 = “nearly every day”), with total scores ranging from 0 to 27. The PHQ-9 has demonstrated excellent psychometric properties, and its Spanish version shows good sensitivity (0.87) and specificity (0.88) for detecting depressive symptoms.

Finally, anxiety symptoms will be measured with the Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006; García-Campayo et al., 2010), a 7-item scale assessing the severity of generalized anxiety over the past two weeks. Items are rated on the same 4-point scale, with total scores ranging from 0 to 21. The GAD-7 has shown excellent reliability and validity, with Cronbach’s alpha coefficients of 0.92 (original version) and 0.93 (Spanish version).

Daily Measures

Daily surveys assessed fluctuations in suicide-related stigma, suicidal ideation, help-seeking intentions, and exposure to suicide-related content. Public stigma was measured with five Likert-scale items reflecting common negative stereotypes (Sheehan et al., 2017a). Participants also indicated whether they had encountered suicide-related content in the previous 24 hours and, if so, described its context. Suicidal ideation (SIDAS) and help-seeking intentions (GHSQ) were assessed on three

separate days during the intervention. Study 4 Annex summarizes the daily assessment schedule.

Usability and Acceptability of the Intervention

Participants' acceptability of the intervention will be assessed using a set of items based on the Unified Theory of Acceptance and Use of Technology (UTAUT; Venkatesh et al., 2003, 2012). The scale includes four core constructs—performance expectancy, effort expectancy, facilitating conditions, and hedonic motivation—rated on a 7-point Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”). In addition, participants will respond to several ad hoc items evaluating the clarity, perceived usefulness, emotional connection, and appropriateness of the program format. These items also include a question on whether participants would recommend the program to others.

To assess barriers to use, participants will complete a custom-developed 9-item visual analogue scale (0 = “never” to 4 = “always”) evaluating practical and perceptual obstacles such as forgetfulness, lack of time, technical issues, or low engagement with the platform.

Furthermore, all participants will be invited to provide qualitative feedback through an open-ended question on potential improvements to the program's content, format, or delivery. In addition, a subsample of up to ten completers will take part in follow-up interviews to gain more in-depth insights into user experiences.

Statistical analysis

All statistical analyses will be conducted using SPSS (version 29) and/or R (version 4.4.0). Descriptive statistics will be calculated for all variables. Baseline differences between groups (iApp vs. dApp) will be assessed using independent-samples t-tests or chi-square tests, depending on the nature of the variables. Any significant differences will be controlled for in subsequent analyses.

To evaluate intervention effects on the primary outcomes (i.e., suicide stigma, suicide literacy, and help-seeking intentions), linear mixed-effects models (LMMs) will be conducted, with fixed effects for group (iApp vs. dApp), time (T0–T4), and their interaction, and a random intercept for participant. This method accounts for intra-individual correlations and missing data under a missing-at-random assumption. Missing data patterns will be evaluated using Little’s MCAR test (Little, 1988).

For daily assessments, LMMs will also be used to examine within-person changes during the intervention period.

All analyses will follow both intention-to-treat and per-protocol principles.

Statistical significance will be set at $p < .05$.

Qualitative data will be analysed using Consensual Qualitative Research (CQR; Hill et al., 2005; Hill & Knox, 2021), which combines independent coding with consensus discussions to ensure rigor and to capture domains and core ideas in participants’ experiences.

3.4.3 Discussion

Despite global advances in suicide prevention, stigma continues to hinder help-seeking and limit public health impact (Niederkrotenthaler et al., 2014; WHO, 2021a, b). Evidence from anti-stigma interventions in other mental health conditions shows consistent benefits (Thornicroft et al., 2016), evidence-based programs specifically targeting suicide stigma remain scarce (Batterham et al., 2022). This trial will evaluate Breaking the Silence (BreakSi), a self-guided mobile app developed to reduce stigma, improve literacy, and promote help-seeking among Spanish-speaking adults.

This study contributes to two emerging areas within suicide prevention research: the growing attention to suicide-related stigma as a distinct and complex phenomenon (Batterham et al., 2022), and the use of digital technologies — particularly mobile applications— to deliver scalable, evidence-based interventions

aimed at reducing such stigma (Thorncroft et al., 2022, 2024). Existing digital programs are often brief, predominantly educational, and methodologically heterogeneous, with limited long-term follow-up and few active components beyond information provision (Bond et al., 2021; Grosselli et al., 2024; Rogers et al., 2018; Kennedy et al., 2020; Dreier et al., 2023). These features reveal clear opportunities to strengthen intervention structure and delivery.

BreakSi integrates four evidence-based strategies rarely combined in digital interventions against suicide stigma: education, indirect contact with lived experience, cognitive flexibility, and values-based reflection. Educational content and indirect contact with lived experience—both widely recognized as effective in reducing public stigma—form the backbone of many existing programs and remain essential components due to their consistent impact on mental health literacy and public awareness (Griffiths et al., 2014; Heijnders & Van Der Meij., 2006). However, growing evidence suggests that these strategies alone may have limited and short-lived effects, particularly in behavioural changes and their maintenance over time (Gronholm et al., 2017; Rao et al., 2019). To address these limitations, BreakSi also incorporates cognitive flexibility and values-based reflection, two components that extend beyond information provision to actively reshape individuals' relationship with internal experiences. Flexibility training helps to reduce the impact of rigid, stigmatizing thoughts and to be more flexible. Values work encourages engagement in meaningful, values-consistent actions; in BreakSi, this takes the form of guided reflection on personal values specifically within the context of suicide prevention. Together, these strategies have shown promise not only in reducing stigma at the cognitive level but also in supporting stigma-free, values-driven behaviour (Masuda et al., 2007; Gaudiano et al., 2017; Krafft et al., 2018). Moreover, by incorporating components that align with the tripartite model of stigma—stereotypes, prejudice, and discrimination—BreakSi is positioned to influence not only beliefs but also affective responses and behavioural manifestations of stigma (Corrigan & Watson, 2002a; Corrigan et al., 2005). This multi-level approach increases the potential for achieving more durable and comprehensive reductions in suicide stigma.

To the best of our knowledge, this is the first Spanish-language mobile health intervention specifically developed to reduce suicide stigma, enhance literacy, and promote help-seeking. As silence and misconceptions continue to limit help-seeking, BreakSi aims to normalize responsible conversations about suicide. By providing accessible, evidence-based information, the app challenges harmful beliefs, reduces both public and self-stigma, and fosters environments where individuals feel more able to ask for and offer help. In doing so, it aligns with the Lancet Commission's call to end mental health stigma and discrimination (Thornicroft et al., 2022). Interactive elements such as immediate-feedback questions further reinforce learning and engagement.

From a methodological perspective, brief daily assessments provide high-resolution data on short-term fluctuations, offering distinct advantages for capturing changes in stigma and help-seeking intentions in real-world contexts. This approach is particularly useful for monitoring sensitive processes such as suicidal ideation — assessed here as a secondary outcome— by enabling fine-grained observation of temporal patterns (Jiménez-Muñoz et al., 2022). The crossover randomized design enhances statistical power by enabling both between- and within-subject comparisons, reduces interindividual variability, and increases sample efficiency—an important benefit in digital mental health trials where recruitment and adherence challenges are common (Elkes et al., 2024).

Despite the strengths of this study, several limitations should be acknowledged. As with many self-guided digital interventions, attrition may be high, potentially affecting data completeness and representativeness. The voluntary nature of recruitment may also result in a sample skewed toward individuals who are already more comfortable with technology or interested in mental health topics, which could limit the generalizability of findings. It is also important to note that this protocol targets a general population sample; therefore, further research will be needed to assess its applicability and effectiveness in clinical or high-risk groups. Finally, although follow-ups at one and three months will provide insight into short-term maintenance, long-term sustainability of effects remains unassessed.

BreakSi ultimately seeks to translate knowledge and attitude change into concrete actions: recognizing risk, seeking help early, engaging in supportive conversations, and offering empathetic responses to others. By promoting these everyday behaviours, the app seeks to reduce silence and build a supportive context that actively facilitates suicide prevention.

Conclusion

We expect the results of this study to offer valuable insight into the short-term effectiveness of a mobile, multi-component intervention specifically designed to reduce suicide, enhance suicide-related literacy, and promote help-seeking in the general population. By integrating education, contact, cognitive flexibility, and values-based strategies —supported by daily assessment and a rigorous crossover design— BreakSi addresses several gaps identified in previous digital mental health programs. This protocol responds to the urgent need for scalable, theory-driven approaches to suicide prevention that can be delivered outside of clinical settings. While further research will be needed to explore long-term effects and applicability in other populations, the findings from this trial could provide initial evidence for the feasibility and utility of a new intervention model aimed at dismantling stigma as a critical barrier to help-seeking and public engagement in suicide prevention.

Study 5

Initial Insights from an Ongoing Randomized Controlled Trial of the Breaking the Silence Mobile Application

This study is in preparation: Pierantonelli, M., Mira, A., & Baños, R.M. (2026). Initial insights from an ongoing randomized controlled trial of the Breaking the Silence mobile application.

3.5.1 Background

Suicide remains a major public health concern worldwide. Each year, more than 700,000 people die by suicide, and it is among the leading causes of death in young people (WHO, 2025). Official mortality counts also underestimate the broader burden because suicide is frequently underreported or misclassified (Lovero et al., 2023; Snowden & Choi, 2020), and attempts occur far more often than deaths (WHO, 2021a). Beyond mortality, suicidal thoughts and behaviours contribute to substantial personal, social, and health system impacts, reinforcing the need for prevention strategies that are scalable and sensitive to barriers that impede timely support (WHO, 2021b).

A persistent obstacle to prevention and timely support is suicide related stigma, which encompasses negative stereotypes and devaluing reactions toward people with suicidal thoughts or behaviours, often expressed through attributions of weakness, selfishness, or moral failing (Carpiniello & Pinna, 2017; Ludwig et al., 2020a). These attitudes can translate into rejection and discrimination (Schomerus et al., 2015; Sheehan et al., 2017a) and may become internalized, contributing to shame, reduced self-esteem, and psychological distress (Carpiniello & Pinna, 2017; Scocco et al., 2016). Stigma can also constrain disclosure and reduce supportive responding in social contexts, thereby hindering pathways to help-seeking and recovery (Reynders et al., 2014; WHO, 2021a). As a socially constructed process with cognitive, emotional, and behavioural dimensions, stigma is increasingly recognized as a key obstacle to prevention and help seeking (Ottati et al., 2005; Reynders et al., 2014; WHO, 2021), and major guidelines recommend incorporating explicit stigma reduction actions within national suicide prevention efforts (O'Connor & Pirkis, 2016; Ministerio de Sanidad, 2025; WHO, 2021a).

Suicide literacy, defined as knowledge about suicide, warning signs, and appropriate responses, has been consistently linked to lower stigma across settings (Jahan et al., 2023; Ludwig et al., 2021) and to greater recognition of risk and willingness to seek support (Reavley & Jorm, 2012; Guo et al., 2023). Moreover, when

individuals are embedded in better-informed social networks, they may be more likely to encourage professional help-seeking rather than relying solely on self-help or inaction (Cruwys et al., 2018). Accordingly, many interventions have aimed to strengthen literacy while reducing stigmatizing attitudes, with generally modest yet encouraging improvements in stigma, mental health literacy, and help-seeking-related outcomes (Perceval et al., 2020; van der Burgt et al., 2021; Wright Berryman et al., 2022). Several notable programs (e.g., Bond et al., 2021; Dreier et al., 2023; Kennedy et al., 2020; Sheehan et al., 2023) are grounded primarily in psychoeducation and indirect contact via lived experience narratives (Corrigan et al., 2005, 2012), two approaches with established relevance for stigma reduction.

Despite this progress, the evidence base is constrained by recurring methodological limitations, including non-randomized designs and brief follow-up periods (Bond et al., 2021; Rogers et al., 2018; Sheehan et al., 2023). There is also growing recognition that stigma reduction efforts must be evaluated for unintended consequences (Grosselli et al., 2024; Kennedy et al., 2020; Perceval et al., 2020). In particular, when public narratives are designed without sufficient care, they may inadvertently foster suicide normalization, portraying suicide as understandable, expected, or even admirable, which has been linked to lower help-seeking and higher suicide risk (Oxle et al., 2022b). These concerns reinforce the need for ethically careful designs and outcome batteries that explicitly monitor potentially harmful attitudinal shifts.

One implication is that interventions may benefit from combining complementary mechanisms rather than relying on education and contact alone (Stuart et al., 2021). Cognitive and psychological processes relevant to stigma, such as rigid or avoidant responding to stigmatizing thoughts, have been targeted in broader mental health stigma research with promising results (Xu et al., 2017). In particular, approaches that emphasize psychological flexibility and values consistent action have been increasingly highlighted in stigma-related work, given their focus on changing how individuals relate to stigmatizing cognitions and on supporting behaviour that aligns with personally meaningful goals (Hayes et al., 2004; Krafft et al., 2018). Beyond

shifting beliefs, values-based components may support behaviourally meaningful change in everyday interactions, an area often underemphasized in stigma interventions (Ashton et al., 2018; Clay et al., 2020), and may strengthen motivation for sustained action (Chrystal et al., 2019; Maio et al., 2001; Lannin et al., 2020).

Digital delivery may further increase reach by reducing geographic barriers and offering privacy to individuals concerned about judgment (Rassy et al., 2021; Rodríguez Rivas et al., 2022). Online formats can also support scalable public education efforts (Clement et al., 2012; Thornicroft et al., 2016) and may achieve stigma reductions comparable to those achieved through traditional delivery in some contexts (Goh et al., 2021). However, engagement patterns can differ meaningfully between web-based and mobile modalities (Morrison et al., 2018), and comparatively few digital interventions have focused specifically on suicide stigma (Dreier et al., 2023; Kennedy et al., 2020). Notably, there is a lack of suicide stigma interventions developed and evaluated specifically for Spanish-speaking populations. In response to this gap, Breaking the Silence (BreakSi; Rompiendo el Silencio, RomSi in Spanish) was developed as a self-guided smartphone application designed to reduce suicide related stigma, enhance suicide literacy, and promote help-seeking, integrating psychoeducation and lived experience content with components aimed at cognitive flexibility and values alignment.

The present study reports initial insights from an ongoing two-arm RCT with a crossover design. The aims were to (1) describe early engagement patterns among participants enrolled in the trial, (2) examine app usability and perceived barriers among participants who completed BreakSi during the immediate access phase, and (3) explore preliminary pre-post patterns in suicide-related stigma, suicide literacy, and help-seeking intentions within completer samples from both trial conditions. However, because the RCT is ongoing and only a small sample of completers was available, this initial research was primarily exploratory in nature.

3.5.2 Method

Design and procedure

This study reports initial insights embedded within the ongoing RCT described in Study 4. The trial design, recruitment procedures, eligibility criteria, intervention content, and assessment schedule are reported in full in that protocol. Briefly, participants were randomized to immediate access to BreakSi (iApp) or delayed access (dApp) and completed assessments at baseline (T0) and at the end of the initial access or wait period (T1).

Importantly, analyses were restricted to completer-based samples defined post-randomization (see Figure 1). Specifically, usability and perceived barriers were examined among iApp participants who completed BreakSi during the immediate access phase, and preliminary outcome patterns were explored using pre-post data available from completers within each trial condition. Because these analyses were restricted to participants identified as completers after randomization, the findings reflect early patterns among completers and may not generalize to the full randomized sample. They should therefore be interpreted as preliminary rather than definitive evidence of intervention effects.

Statistical analysis

Analyses were conducted in IBM SPSS Statistics (version 29). Given the small sample size and potential violations of parametric assumptions, nonparametric tests were used. Continuous and ordinal variables are reported as median (IQR), and categorical variables as n (%). Baseline (T0) characteristics were compared between groups using Mann–Whitney U tests for continuous/ordinal variables and exact tests (Fisher’s exact or Freeman–Halton) for categorical variables. Pre–post change scores ($\Delta = T1 - T0$) were compared between groups using Mann–Whitney U tests, and within-group T0–T1 changes were assessed using Wilcoxon signed-rank tests. Effect sizes are reported as r (0.10 = small, 0.30 = medium, 0.50 = large). Statistical significance was set

at $\alpha = .05$ (two-tailed). Given the exploratory nature of this initial-insights analysis, p-values were interpreted descriptively (no adjustment for multiple comparisons).

3.5.3 Results

Participant flow and reach

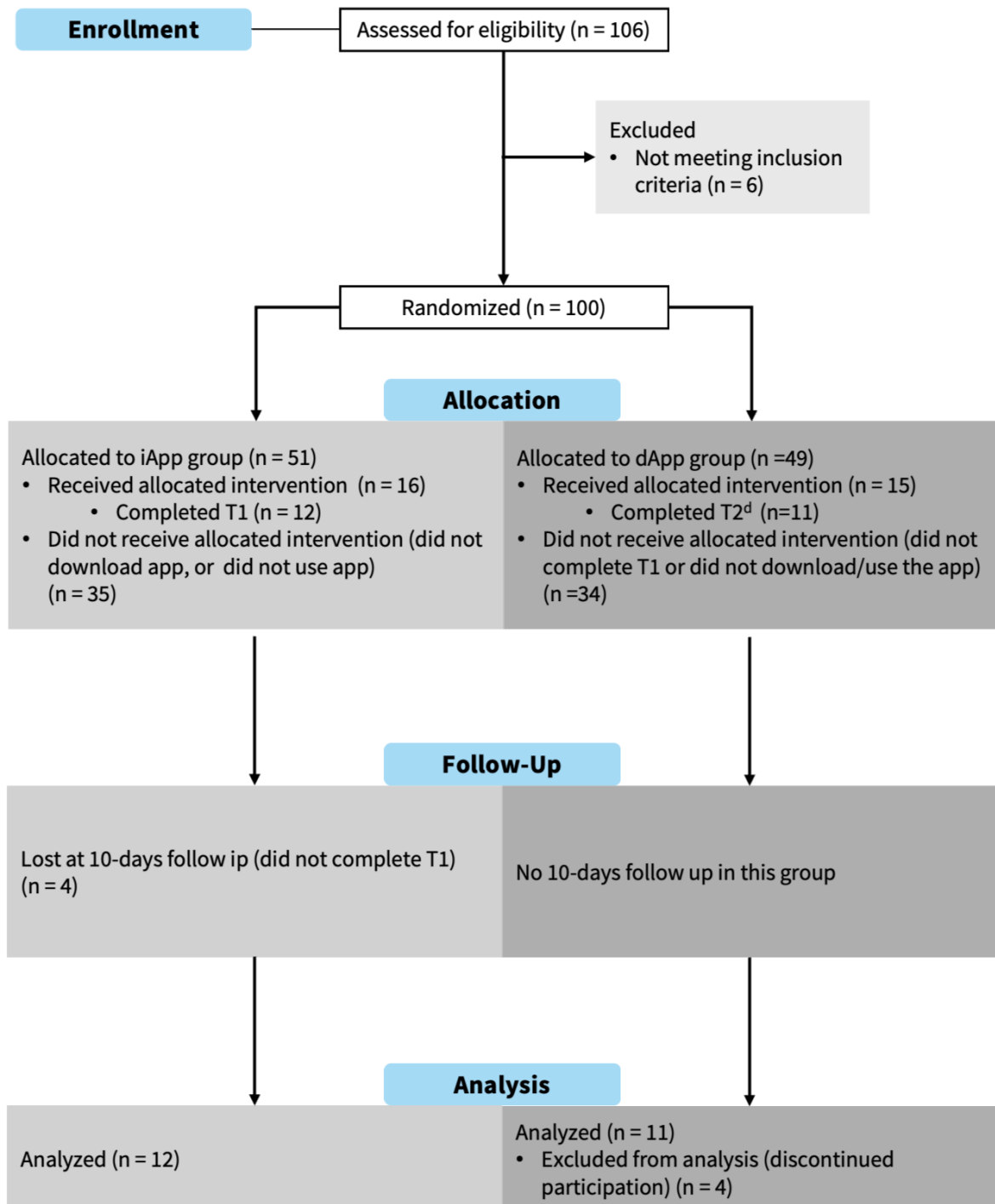
This section focuses on implementation indicators (participant flow, reach, and adherence) and delineates the completer-based samples used for exploratory outcome patterns. Participant flow is summarized in Figure 1. Between October 2025 and February 2026, 106 individuals expressed interest and were assessed for eligibility; 100 met inclusion criteria and were randomized (94.3%, 100/106). Participants were stratified by low vs. high baseline stigma (SOSS stigma subscale ≥ 1.62) and allocated to iApp ($n = 51$) or a waitlist condition (dApp; $n = 49$). All randomized participants completed the baseline assessment (T0).

In the iApp arm, 31.4% (16/51) initiated the intervention (i.e., downloaded and used the app at least once), whereas 68.6% (35/51) did not initiate (did not download, $n = 34$; did not use, $n = 1$). Twelve participants (23.5%, 12/51) completed the post-intervention assessment (T1). These iApp completers constituted the analytic sample for the exposure-based outcome patterns ($n = 12$).

In the waitlist arm, 51.0% (25/49) did not complete the T1 assessment at the end of the waitlist period, whereas 49.0% (24/49) completed T1. 13 participants did not continue their participation (i.e., did not download the app, did not use it, or abandoned the process). Thus, 11 participants completed the mobile application content and the post-intervention assessment (T2^d) during the cross-over phase and were included in completer-based outcome analyses for dApp ($n = 11$).

Figure 1.

Flowchart of Participants Through the Trial



Participants' characteristics at baseline

A total of 23 participants were included (iApp: $n = 12$; dApp: $n = 11$). Table 1 summarizes baseline demographic and clinical characteristics by group. Overall, most participants were students (dApp: 70.2%; iApp: 91.7%) and reported baccalaureate-level education (dApp: 90.9%; iApp: 66.7%). Most participants reported some degree of religiosity (dApp: 81.9%; iApp: 58.3%); among those, the majority identified as Catholic. Most participants also reported knowing where to seek help if needed (dApp: 72.7%; iApp: 83.3%). Exact tests (Fisher's exact or Fisher-Freeman-Halton) indicated similar distributions for education ($p = .217$), occupational status ($p = .149$), religious belief ($p = .132$), and knowledge of help sources ($p = .640$).

Baseline depressive and anxiety symptoms did not differ between groups (PHQ-9: $U = 61.50$, $p = .780$; GAD-7: $U = 44.00$, $p = .173$). Suicidal ideation in the past month was reported by 4 participants (18.2%; 2 per group; $p = .632$), with minimal severity (SIDAS total scores range from 1 to 6). Consistent with the protocol, self-stigma (PSSQ) was administered only to participants reporting suicidal ideation ($n = 4$; 2 per group). Only the self-blame subscale was computed, as most participants did not have scorable responses on the remaining subscales. Self-blame scores ranged from 7 to 18 (dApp group: $Mdn = 7.00$; iApp group: $Mdn = 14.50$).

Groups were broadly comparable at baseline. However, a higher proportion of iApp participants reported suicide-related exposure in their environment compared with dApp (66.7% vs. 18.2%; Fisher's exact test, $p = .026$). All remaining baseline comparisons were not statistically significant.

Baseline comparisons are reported for context; given the completer-based sample, they should not be overinterpreted as evidence of baseline equivalence.

Table 1

Comparisons Between iApp and dApp at Baseline

	Total (N = 23)	iApp (N = 12)	dApp (N = 11)	Test statistic	p
Gender identity, n (%)				FFH = 1.22	1.00
Woman	17 (73.9)	9 (75.0)	8 (72.7)		
Man	5 (21.7)	2 (16.7)	3 (27.3)		
Non-binary	1 (4.3)	1 (8.3)	0 (0.0)		
Age (mdn, IQR, range)	20.00 (1) [19-47]	20.50 (2) [19-47]	20.00 (0) [20-23]	<i>U</i> = 50.00	.278
Suicide Stigma – SOSS – SF (mdn, IQR)					
Stigma	1.37 (0.88)	1.50 (1.13)	1.37 (0.88)	<i>U</i> = 54.50	.476
Isolation/Depression	3.75 (0.75)	4.00 (1.06)	3.50 (0.75)	<i>U</i> = 57.00	.569
Glorification/ Normalization	3.00 (1.50)	2.88 (1.56)	3.00 (1.25)	<i>U</i> = 56.00	.536
Suicide literacy – LOSS-SF (mdn, IQR)	8.00 (3.00)	7.50 (5.00)	9.00 (1.00)	<i>U</i> = 39.50	.092
Formal help-seeking intentions – GHSQ Formal (mdn, IQR)	5.00 (2.00)	5.25 (1.75)	5.00 (2.50)	<i>U</i> = 55.00	.495

Note. iApp = immediate-use app; dApp = delayed-use app; mdn = median, IQR = interquartile range; Test statistics: *U* = Mann–Whitney *U*. *FFH* = Fisher–Freeman–Halton exact test.

* $p < .05$.

Exploratory primary outcome patterns among completers

Within-group comparisons

Within each condition, pre–post changes (T0–T1) were examined using Wilcoxon signed-rank tests. As shown in Table 2, statistically detectable pre–post changes were observed for suicide literacy (LOSS-SF) in the iApp condition and for SOSS-SF Glorification/Normalization in the dApp condition, both indicating increases

from baseline to post-test with large effect sizes ($r > .50$). No other outcomes showed significant pre-post differences.

Several non-significant comparisons nonetheless showed effect sizes of moderate to large magnitude. In the iApp group, a moderate effect was observed for SOSS-SF Glorification/Normalization and a large effect for SOSS-SF Isolation/Depression, both reflecting lower post-test scores. In the dApp group, a moderate effect was found for SOSS-SF Stigma, with higher post-test scores, and a large effect-size estimate was observed for LOSS-SF, with lower post-test scores. However, this latter estimate should be interpreted cautiously, as it was based on only four nonzero paired differences. Overall, these findings suggest potentially meaningful pre-post shifts that may not reach statistical significance in small samples.

Table 2.

Wilcoxon Signed-Rank Tests for Within-Group Pre–Post Differences

	Condition	T0 <i>Mdn</i> (<i>IQR</i>)	T1 <i>Mdn</i> (<i>IQR</i>)	<i>Z</i>	<i>p</i>	<i>r</i>	<i>n</i>
SOSS-SF							
Stigma	iApp	1.50 (1.13)	1.50 (1.00)	-0.51	.610	-0.16	10
	dApp	1.37 (0.88)	1.62 (1.13)	-1.40	.162	0.44	10
Isolation/ depression	iApp	4.00 (1.06)	3.12 (1.63)	-1.91	.056	-0.60	10
	dApp	3.50 (0.75)	3.50 (1.00)	-0.51	.611	-0.19	7
Glorification/ normalization	iApp	2.87 (1.56)	2.37 (1.00)	-1.07	.284	-0.32	11
	dApp	2.00 (1.25)	3.00 (1.25)	-2.49	.013*	0.79	10
LOSS-SF	iApp	7.50 (5.00)	8.00 (2.00)	-2.04	.042*	0.69	9
	dApp	9.00 (1.00)	7.00 (2.00)	-1.84	.066	-0.92	4
GHSQ – Formal help-seeking	iApp	5.25 (1.75)	5.00 (0.88)	-0.37	.715	-0.12	10
	dApp	5.00 (2.50)	5.00 (3.00)	-0.30	.763	-0.11	8

Note. *Mdn* = median; *IQR* = interquartile range. Effect size magnitude was computed as $r = |z|/\sqrt{n}$, with sign assigned according to the direction of change in medians from T0 to T1 (negative = decrease; positive = increase). *n* indicates the number of nonzero paired differences included in the Wilcoxon signed-rank test

* $p < .05$.

Between-group comparisons

Table 3 summarizes between-group differences in pre–post change scores ($\Delta = T1 - T0$) for the primary outcomes. A significant between-group difference was observed for suicide literacy (LOSS-SF), with greater improvement in iApp than dApp

in this analysis. For the SOSS-SF glorification/ normalization subscale, the between-group difference did not reach statistical significance, although the effect size was moderate ($r > .30$), indicating a potential reduction in iApp relative to dApp. No statistically significant between-group differences were found for the remaining stigma subscales or formal help-seeking intentions.

Table 3.

Mann–Whitney U Tests Comparing Change Scores Between iApp and dApp

	iApp (n=12)	dApp (n=11)				
	Δ Mdn (IQR)	Δ Mdn(IQR)	<i>U</i>	<i>Z</i>	<i>p</i>	<i>r</i>
SOSS-SF						
Stigma	-0.06 (1.19)	0.12 (0.50)	50	-0.99	.323	0.21
Isolation/ depression	-0.50 (1.56)	0.00 (0.75)	49	-1.06	.289	0.22
Glorification/ normalization	-0.25 (2.13)	0.25 (0.25)	36.50	-1.84	.065	0.39
LOSS-SF	1.00 (2.75)	0.00(2.00)	19.50	-2.99	.003*	0.63
GHSQ – Formal help-seeking	-0.25 (1.00)	0.00 (1.00)	62.50	-0.22	.823	0.05

Note. iApp = immediate-use app; dApp = delayed-use app; Δ = change score (T1 – T0); Mdn = median; IQR = interquartile range; *U* = Mann–Whitney *U* statistic; *Z* = standardized test statistic; *p* = *p* two-tailed asymptotic *p* value; Effect size was computed as $r = |z|/\sqrt{N}$, where $N = 23$

* $p < .05$.

Acceptability and barriers

Acceptability and usability were assessed in the 12 participants from the iApp arm who completed the mobile application; responses were collected immediately after completing the mobile application. As shown in Table 4, usability ratings were generally high, with all participants agreeing or strongly agreeing that they had the necessary resources, found the app easy to use, and had sufficient knowledge to use it. Most participants also reported a clear understanding of the content and a positive interaction with the app. In contrast, perceived usefulness in daily life received the lowest endorsement, and feeling supported despite online delivery showed moderate endorsement. Reported barriers to engagement are summarized in Figure 2. The most frequently endorsed barriers were forgetting to use the app and lack of time. In contrast, technical barriers (e.g., internet issues, poor fit with phone use, app issues) were infrequently reported.

Table 4

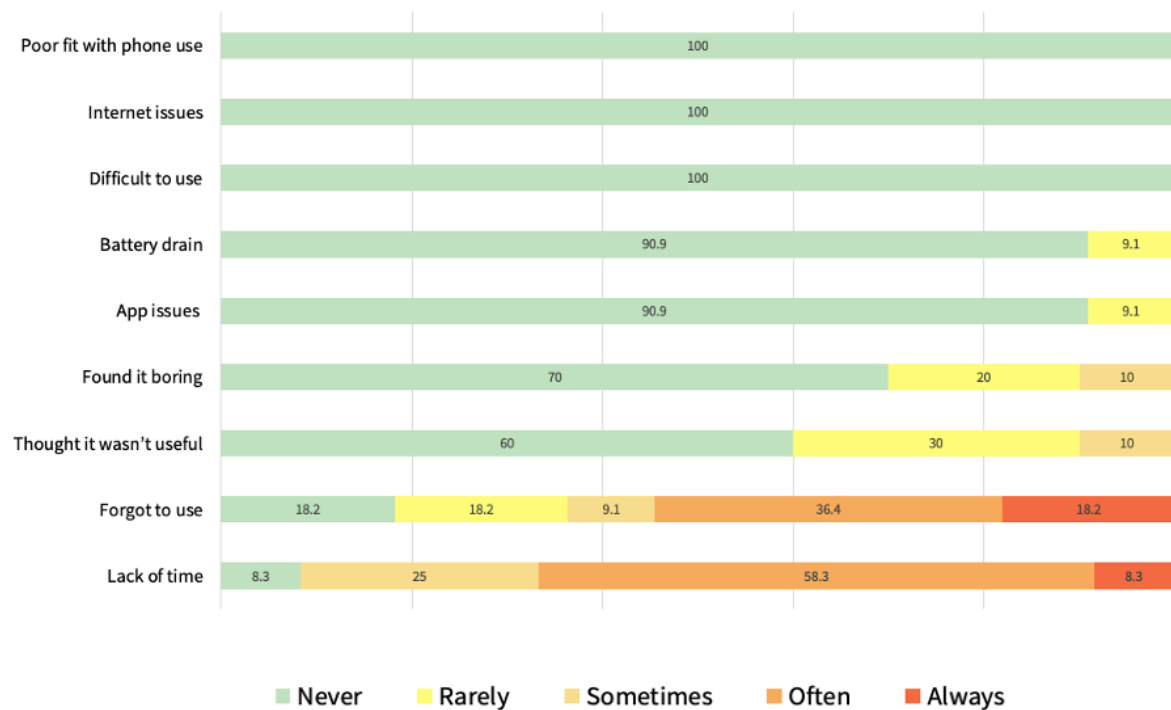
Acceptability and Usability of the Mobile Application in iApp Group (n=12)

	Mdn (IQR)	Agree/ strongly agree, %
I had access to the necessary resources to use the application.	7.00 (0.00)	100.00%
The application was easy to use.	7.00 (0.00)	100.00%
I had sufficient knowledge to use the application.	7.00 (0.00)	100.00%
Learning to use the application was easy for me.	7.00 (0.00)	100.00%
I clearly understood the program content.	7.00 (1.00)	91.67%
Interaction with the mobile application was clear and understandable.	7.00 (0.75)	91.67%
I would recommend this program to someone experiencing a difficult situation.	7.00 (1.00)	91.67%
The internet was an appropriate medium for delivering this program.	7.00 (1.00)	83.33%
Using the application was enjoyable.	6.00 (1.75)	75.00%
I liked using the application.	6.50 (2.00)	66.67%
The program helped me reflect on myself and my current life situation.	7.00 (2.00)	66.67%
I felt supported throughout the program, despite it being delivered online.	5.50 (1.00)	50.00%
The application was useful in my daily life.	5.00 (2.00)	33.33%

Note. Percentages refer to participants who selected *agree* or *strongly agree* (scores of 6 or 7).

Figure 2

Reported Barriers to Using the Mobile Application in iApp Group (n=12)



3.5.4 Discussion

This study aimed to explore preliminary signals of the potential impact of Break the Silence (BreakSi), a mobile application designed to reduce suicide stigma, improve suicide literacy, and enhance help-seeking intentions. The analyses are embedded within an ongoing RCT. However, the present report is exploratory in nature, as it relies on the early data available to date and focuses on participants who completed the assigned app-based content.

Concerning recruitment and reach, a high eligibility rate and a few screened individuals excluded were observed. In the iApp group, the primary challenge was intervention initiation: despite receiving download instructions on the same day as the baseline response and additional reminders, many participants did not install the app, suggesting friction in onboarding or installation, despite additional contact and support measures to facilitate adherence. In the dApp group, the main challenge was retention at the post-waitlist assessment; among respondents, most subsequently

downloaded the app because installation instructions were delivered immediately at the end of the questionnaire, which may have facilitated uptake when motivation was highest. Importantly, these patterns (i.e., early drop-off in initiation and attrition at follow-up assessments) are common challenges in mobile health applications and highlight the need to prioritize engagement and retention strategies in future iterations (Bremer & Sarker, 2023; Saleem et al., 2021).

Regarding intervention effectiveness, suicide literacy provided the clearest preliminary signal, showing the largest and most consistent changes across analyses, with a significant within-condition improvement in the iApp group and a significant between-group difference favouring iApp over dApp. This finding is particularly meaningful because suicide literacy is a predictor of suicide stigma (Jafari et al., 2025; Ludwig et al., 2021) and may also shape help-seeking pathways, with better-informed individuals more likely to endorse or recommend professional sources of help rather than informal support alone or no help (Cruwys et al., 2018). This pattern aligns with prior suicide stigma and literacy interventions delivered in face-to-face and digital formats across different populations (Bond et al., 2021; Dreier et al., 2023; Grosselli et al., 2024). Suicide literacy remained stable pre- to post-waitlist period.

Concerning suicide stigma, findings varied across domains. Despite the consistent signal for improved suicide literacy, the stigma subscale (e.g., cowardly, immoral, or pathetic attributions) showed no meaningful change within either condition and no clear contrast between them. As commonly reported in prior interventions, improvements in suicide literacy do not necessarily translate into reduced suicide stigma (Kennedy et al., 2020; Oexle et al., 2025; Williams & Witte, 2017). Although literacy promotion is widely regarded as good practice, it may be insufficient on its own, particularly in groups with high baseline knowledge, as in the present sample (Kennedy et al., 2018). This limitation informed the design of BreakSi, which deliberately incorporated components beyond education in an attempt to address dimensions of stigma not typically responsive to knowledge-based approaches alone.

In the isolation/depression domain (i.e., viewing suicidal individuals as disconnected or lonely), scores showed a trend towards improvement within the iApp group, although this was not statistically significant, and no clear between-condition difference emerged. Given the small complete sample size, these patterns should be interpreted cautiously as imprecise but potentially meaningful signals. Conceptually, this domain may reflect a common stereotype that suicide is primarily driven by depression or social withdrawal and that risk would be obvious through clear signs of isolation. BreakSi addresses these misconceptions by emphasizing that suicidality is shaped not only by clinical factors such as mental disorders, but also by social determinants and life context (Pirkis et al., 2024). It also highlights that warning signs can vary and may not be readily observable, underscoring the value of proactive support rather than relying on unmistakable signals (Bagge et al., 2023; Xiao et al., 2023).

In the glorification/normalization domain (e.g., describing suicidal individuals as brave, noble, or strong), we observed a clear increase over the waitlist period, whereas BreakSi completion was not associated with an increase; the between-condition difference approached but did not reach statistical significance. Taken together, this divergence is encouraging, as it suggests BreakSi did not elicit the unintended increases in suicide normalization reported in some prior stigma-focused interventions (Kennedy et al., 2020). Higher suicide normalization has been associated with lower help-seeking intentions and a greater likelihood of current suicidality, including after adjusting for key clinical and sociodemographic factors (Oexle et al., 2022b). This underscores the importance of monitoring normalization not only in research but also in the design and evaluation of stigma-focused interventions. In BreakSi, content was developed with explicit attention to avoiding messages that could inadvertently promote suicide-normalizing or glorifying attitudes.

Regarding formal help-seeking intentions, we did not observe a clear preliminary signal of improvement in either condition, with scores remaining broadly stable to slightly lower over time. This null pattern should be interpreted cautiously, as intentions were captured with a very brief indicator focused on only two sources

(helplines and mental health services), which may have limited sensitivity to detect change in a small sample. In line with qualitative insights from the earlier feasibility study, BreakSi may be more likely to influence proximal supportive responses, such as being attentive to warning signs or feeling better prepared to support others, rather than shifting intentions toward accessing formal services directly (Study 3). Future evaluations would benefit from a more comprehensive assessment of formal help-seeking in the context of suicidality by expanding the range of professional sources assessed and adding measures of beliefs and attitudes toward professional help-seeking (Han et al., 2018a; Nakamura et al., 2022). When feasible, these should be complemented with indicators of actual help-seeking behaviour, as recommended in prior digital intervention studies (García-Soriano et al., 2024).

The interpretations mentioned above should also be considered in light of baseline context: while baseline characteristics were broadly comparable across conditions, suicide-related exposure in participants' environment was more frequently reported in the iApp group. Although its role cannot be determined here, this imbalance warrants consideration as a potential moderator or covariate in future adequately powered evaluations. Further work is warranted to clarify the mechanisms of change in suicide stigma.

Among completers, usability and perceived ease of use were high, suggesting that once installed, the mobile application was straightforward to navigate and understand. In contrast, the most frequently endorsed barriers reflected everyday constraints, particularly forgetting and lack of time, rather than technical difficulties. Notably, completion often occurred on the same day participants received automated reminders, indicating that timely prompts may help mitigate forgetfulness and facilitate completion.

Several limitations should be considered when interpreting these initial insights. First, analyses were restricted to participants who completed BreakSi. As a result, the comparability afforded by randomization is attenuated, and estimates are susceptible to selection and attrition bias; findings should therefore be interpreted as

preliminary, descriptive patterns among engaged users rather than definitive evidence of causal efficacy in the randomized sample. Second, the available sample was small, limiting statistical precision and power, and effect-size estimates may be unstable. Third, analyses relied on complete cases from the early available dataset, and more robust longitudinal modelling approaches to address missingness were not feasible at this stage. Finally, multiple outcomes and subscales were examined in an exploratory framework; thus, results should be viewed as hypothesis-generating and warrant replication in larger evaluations.

Despite these limitations, the present study has several strengths. To our knowledge, this is the first randomized evaluation of a mobile application designed to reduce suicide stigma, improve suicide literacy, and promote help-seeking intentions in a Spanish-speaking population. The study assessed a broad set of theoretically relevant outcomes, including multiple stigma domains, and complemented outcome patterns with acceptability and barrier data to inform iterative refinement. In addition, findings can be interpreted in light of convergent insights from a prior feasibility study, strengthening the rationale for the intervention targets and highlighting concrete implementation levers for future trials.

Overall, these initial insights suggest that completing BreakSi is associated with a consistent improvement in suicide literacy, a key intervention target with downstream relevance for stigma and help-seeking. Suicide-stigma domains showed more heterogeneous patterns: stigmatizing attributions showed no clear signal of improvement, with a tentative signal of lower isolation/depression endorsement following BreakSi completion. Notably, glorification/normalization showed a potentially favourable pattern, with lower endorsement among BreakSi completers alongside increases in the waitlist condition; this underscores the importance of monitoring this domain in future studies and of maintaining careful message framing in suicide-stigma interventions. Acceptability among completers was high, and technical barriers were uncommon, indicating that usability is unlikely to be the primary obstacle once the app is installed; instead, engagement appeared more sensitive to everyday constraints such as forgetting and limited time. Taken together,

these findings support the feasibility and promise of BreakSi as a scalable Spanish-language approach and provide clear priorities for refinement and for a future adequately powered randomized evaluation to clarify mechanisms and establish effectiveness.

CHAPTER 4.

Results

As outlined in the University of Valencia's doctoral thesis regulations, this chapter summarises the key empirical findings of the aforementioned five studies.

4.1 Main results of Study 1

4.1.1 Psychometric properties of SIDAS

CFA was conducted exclusively with participants reporting suicidal ideation, as the construct is only meaningful within this subgroup. The analysis supported a unidimensional structure, consistent with the theoretical model proposed by Van Spijker et al. (2014). Model fit indices indicated a good overall fit to the data ($\chi^2(5) = 9.663$, $p < .001$, CFI = .98, RMSEA = .08, SRMR = .04), indicating the suitability of the single-factor solution. Factor loadings were generally high and significant, suggesting that most items contributed strongly to the latent construct. Only the item assessing controllability (item 2) presented a weaker but still significant loading (0.26). Internal consistency was acceptable ($\omega = 0.73$). Multi-group CFA showed measurement invariance across gender at the scalar level, supporting the comparability of SIDAS scores between men and women.

4.1.2 Psychometric properties of SOSS-SF

The CFA supported the expected three-factor structure of the SOSS-SF, showing an adequate fit to the data ($\chi^2(101) = 319.353$, $p < .001$, CFI = .93, RMSEA = .06, SRMR = .06). All sixteen items loaded significantly on their respective factors, with coefficients mostly between 0.4 and 0.7, except for the item “dedicated” (Item 3), which showed a weaker loading (0.35). Excluding this item did not improve model fit, and it was therefore retained. Internal consistency was good for the Stigma ($\omega = 0.86$) and Isolation/Depression ($\omega = 0.77$) subscales, while the Glorification/Normalization subscale presented lower reliability ($\omega = 0.67$). Multi-group CFA indicated measurement invariance across gender at the scalar level.

4.1.2 Psychometric properties of LOSS-SF

The initial CFA with twelve items did not show an adequate fit to the data ($\chi^2(54) = 112.52$, $p < .001$, CFI = .841, RMSEA = .083, SRMR = .083). Two items with non-significant loadings (items 4 and 6) were removed, resulting in a ten-item version with an improved and acceptable fit ($\chi^2(35) = 44.258$, $p < .001$, CFI = .929, RMSEA = .065, SRMR = .067). IRT analyses showed that the two-parameter logistic (2PL) model provided the best balance of fit and parsimony. Most items presented moderate to high discrimination (>1.0) and low to moderate difficulty levels, with one item requiring higher knowledge to be answered correctly. Differential item functioning analysis revealed no gender-related bias.

4.2 Main results of Study 2

4.2.1 Descriptive characteristics and levels of suicide literacy and stigma

The sample included 678 adults from Spain and Latin America. Most participants had university education and were employed. Over half of the participants were unaware of suicide-related help resources, and many reported having had an experience related to suicide, some of which had resulted in death by suicide. Overall, depressive and anxious symptoms were minimal, and the sample showed low severity of suicidal ideation. Compared to Spaniards, Latin American participants reported higher anxiety, stronger religious/spiritual beliefs, more suicide exposure, and differences in educational attainment.

Regarding suicide stigma, in the SOSS-SF, the highest endorsement appeared for Isolation/Depression and Glorification/Normalization. Latin American participants obtained higher scores than Spaniards on both Glorification/Normalization and Stigma. The adjectives most frequently endorsed were “lost”, “disconnected”, and “isolated”. Compared with Spaniards, the Latin American group rated individuals who die by suicide as more “pathetic,” “vengeful,” “irresponsible,” “isolated,” “disconnected,” “noble,” “strong,” and “dedicated” and less “lost.”

Concerning suicide literacy, participants showed a moderate overall level of knowledge, with the highest accuracy in the Causes/Nature subscale and lower performance in Risk Factors and Signs/Symptoms. Spaniards demonstrated higher total literacy scores, and better knowledge of suicide causes and signs, whereas Latin Americans obtained higher scores on risk factors.

4.2.2 Relationship between sociodemographic and clinical variables with suicide stigma and suicide literacy

Correlation analyses revealed that age was inversely related to suicide literacy, indicating that younger participants tended to show greater knowledge about suicide. In contrast, stronger religious or spiritual beliefs were associated with higher levels of suicide stigma and lower suicide literacy across most domains. Overall, individuals with more stigmatizing attitudes tended to have less accurate knowledge about suicide.

Regarding clinical variables, depressive symptoms were positively associated with the glorification of suicide and with overall suicide literacy, suggesting a tendency for individuals with more depressive symptoms to demonstrate slightly greater knowledge about suicide. Anxiety symptoms were related to higher endorsement across several stigma dimensions, particularly those reflecting glorifying and depressive representations. Meanwhile, suicidal ideation was associated with stronger agreement with the stigma and isolation/depression dimensions, as well as with lower knowledge about treatment aspects. Taken together, clinical symptomatology showed small and mixed associations with suicide literacy, indicating that greater emotional distress was linked to both increased awareness and certain stigmatizing attitudes about suicide.

4.2.3 Stigma of Suicide Scale dimensions regressed on suicide literacy, sociodemographic, and clinical variables

Hierarchical linear regression models were conducted separately for each SOSS-SF dimension. Suicide literacy variables were entered first, followed by

sociodemographic characteristics, and finally clinical variables. This approach allowed examination of the incremental contribution of each block of predictors in explaining attitudes toward suicide.

For the Stigma dimension, lower knowledge about suicide causes and treatment predicted higher stigma levels. After including sociodemographic variables, gender, religious beliefs, and awareness of available help resources also emerged as significant predictors: women showed lower stigma, while stronger religiosity and lack of knowledge about how to find help were associated with higher stigma. When clinical variables were added, depressive symptoms were related to lower stigma; however, this block did not substantially increase the model's explanatory power.

In contrast, for the Glorification/Normalization dimension, lower knowledge about suicide treatment and being from Latin America predicted higher glorification scores. Clinical variables did not significantly contribute to this dimension.

Meanwhile, for Isolation/Depression, none of the literacy or sociodemographic variables were significant predictors, whereas anxiety symptoms were positively associated with this dimension, indicating that higher anxiety was linked to greater endorsement of depressive and isolating representations of suicide.

Overall, suicide literacy—particularly understanding of causes and treatment—consistently explained variations in stigma-related attitudes, while demographic and emotional factors contributed differentially across dimensions.

4.2.4 Suicide literacy regressed on sociodemographic and clinical variables

A hierarchical Poisson regression was performed to identify sociodemographic and clinical predictors of suicide literacy. In the first step, sociodemographic variables were entered, revealing that stronger religious or spiritual beliefs were associated with lower suicide literacy. Other sociodemographic characteristics did not show significant effects. When clinical variables were subsequently added, the model did

not improve its explanatory capacity, and none of the clinical predictors reached significance.

Taken together, these findings indicate that suicide literacy was primarily shaped by religious or spiritual beliefs, whereas clinical symptoms did not contribute meaningfully to its prediction.

4.3 Main results of Study 3

4.3.1 Feasibility and Preliminary Outcomes

Participants characteristics

The study included 35 participants, ranging in age from 18 to 69 years. The sample was predominantly female, and most participants were students with secondary or vocational education. Most were born and currently residing in Spain. The majority reported knowing where to seek psychological help in the event of suicidal ideation. Around one third described prior exposure to suicide-related events within their environment, typically involving close or very close relationships. Baseline symptom levels were generally mild for both depression and anxiety, and suicidal ideation was uncommon at baseline, reported by only a small minority of participants.

Recruitment and adherence rates

A total of 199 individuals initiated the screening survey. Only a small proportion were excluded as ineligible, and a further minority did not complete the baseline. Most eligible respondents completed baseline and received app download instructions (154). Attrition was most pronounced between assessment and app engagement: around one third did not download the app, and a similar proportion downloaded it but did not begin using the content. Overall, 60 participants accessed the app and started the intervention. Among intervention starters, around one-third did not complete the program within the intended timeframe despite reminders, while post-

intervention non-completion was uncommon. In total, 35 participants initiated the intervention and completed the post-intervention assessment.

Engagement and acceptability

Participants completed the intervention in an average of 6.26 days, and only a small subset required additional time (up to 17 days). Most participants downloaded the app on the same day they received the instructions. Despite prompt download, most participants-initiated app use at least one day later. Adherence to the intervention varied: 24 participants completed the full content, while 11 completed it partially. Among partial completers, six completed less than half of the content, and five completed more than half.

Overall acceptability was high, with participants consistently reporting that the app was clear, easy to use, and supported by adequate resources and technological conditions; understanding of the content and willingness to recommend the program were also strong, whereas perceived usefulness in daily life was comparatively lower (endorsed by around half of respondents). Barriers were primarily practical (forgetting to use the app and lack of time) while usability or technical difficulties were less commonly reported, and only a small proportion indicated low motivation or boredom.

Primary effectiveness data

For primary outcomes, suicide stigma showed a small reduction on the stigma subscale, while larger decreases were observed in beliefs linking suicide to isolation/depression and in perceptions of suicide as normalised or glorified. Suicide literacy increased from pre- to post-intervention, reflected in a higher proportion of correct responses overall; improvements were most evident for knowledge about the causes/nature of suicide and risk factors, whereas knowledge related to signs and especially treatment/prevention showed minimal change. Help-seeking intentions showed no clear pre-post change for formal sources or overall help-seeking, while

intentions to seek help from informal sources showed a slight increase (reported descriptively).

With respect to clinical outcomes, the intervention period was associated with a small but statistically significant reduction in depressive symptoms. However, anxiety symptoms and suicidal ideation did not show statistically significant changes between pre- and post-intervention.

4.3.2 Qualitative participant experience

In-app open-ended responses during the intervention

Participants' responses to in-app open-ended prompts clustered around five main categories of values-consistent actions: (1) *supportive listening and presence*, emphasizing emotional availability over problem-solving; (2) *non-judgmental and empathic attitudes*, reflecting an intention to respond with openness rather than evaluation; (3) *offering support and accompaniment*, involving proactive and unconditional closeness; (4) *open communication about suicide*, including a willingness to address the topic directly; and (5) *information seeking and awareness of warning signs*, reflecting a desire to increase personal preparedness.

Regarding post-section feedback, responses during the educational components (Sections 1–2) were broadly positive, with participants highlighting content clarity and reporting increased knowledge about stigma and suicide-related concepts. Feedback on the myths section (Section 3) reflected more explicit attitudinal shifts, with several participants acknowledging prior misconceptions and describing a more nuanced understanding of suicide as rooted in psychological suffering. Feedback on the final values section (Section 4) was sparser and more integrative, centering on the overall value of the program rather than specific content.

Post-intervention open-ended feedback

When asked about potential improvements, nearly half the participants (17/35) indicated they would not change anything. Among those who offered

suggestions (n = 15), the most common concern related to navigation and continuity between sections, as the app did not clearly indicate completed modules or preserve users' progress. A smaller number suggested format-related adjustments, such as shorter sections or greater interactivity. Two participants also noted that some content could be better tailored to individuals with a lived experience of suicidal ideation.

Post-intervention qualitative interviews

Eight semi-structured interviews were analysed using CQR, yielding three domains and 15 categories. *Domain 1 (Overall experience and evaluation)* captured broad satisfaction with BreakSi: participants described the app as didactic, well-structured, and appropriately toned when addressing suicide. They also recalled specific content elements (e.g., myths, contact-based stories) that remained salient after use and consistently identified the app as a practically useful resource, particularly for those with limited prior knowledge. *Domain 2 (Perceived effects)* highlighted meaningful personal impact: participants reported acquiring concrete communication and support strategies (e.g., active listening, not minimizing distress), increased confidence to address suicide-related situations, and shifts in pre-existing beliefs and attitudes. Some described feelings of empathy, relief, and hope, while a minority reported mild, self-regulated emotional activation during use. *Domain 3 (Usability)* reflected a generally positive interaction experience: the app was perceived as easy to use and to progress through at one's own pace. However, navigation flow issues — particularly the lack of clear progress indicators between sections — were the most frequently noted limitation. Participants also identified engaging features such as videos and real-life stories as key drivers of sustained interest.

4.4 Main results of Study 5

4.4.1 Participant flow and reach

Between October 2025 and February 2026, 106 individuals were screened for eligibility, and 100 met the inclusion criteria and were randomised (94.3%).

Participants were allocated to the immediate access condition (iApp; $n = 51$) or the delayed access condition (dApp; $n = 49$). In the iApp arm, 31.4% of participants initiated the intervention, and 23.5% ($n=12$) completed both the application and the post-intervention assessment, constituting the iApp completer sample. In the dApp arm, 49.0% of participants completed the T1 assessment at the end of the waitlist period, and of those, 11 subsequently completed the application and the T2^d assessment, constituting the dApp completer sample. The combined analytic sample for exploratory outcome analyses comprised 23 participants (iApp: $n = 12$; dApp: $n = 11$).

4.4.2 Participants' characteristics at baseline

The completer sample was predominantly composed of women (iApp: 75.0%; dApp: 72.7%). Most participants were students with baccalaureate-level education, and most reported some degree of religiosity and awareness of where to seek help if needed. Baseline distributions for sociodemographic variables, depressive symptoms (PHQ-9), and anxiety symptoms (GAD-7) were statistically comparable between conditions. Baseline scores on the primary outcome measures (suicide stigma; SOSS-SF, suicide literacy; LOSS-SF, and formal help-seeking intentions; GHSQ) did not differ significantly between groups. Suicidal ideation in the past month was reported by four participants (18.2%; two per condition). One notable baseline difference emerged: a higher proportion of iApp participants reported suicide-related exposure in their environment compared with dApp participants (66.7% vs. 18.2%; $p = .026$). All remaining baseline comparisons were non-significant.

4.4.3 Exploratory primary outcome patterns among completers

Within-group comparisons

Wilcoxon signed-rank tests revealed two statistically significant pre-post changes: suicide literacy (LOSS-SF) improved significantly in the iApp condition, and glorification/normalization (SOSS-SF) increased significantly in the dApp condition,

both with large effect sizes ($r > .50$). No other outcomes reached statistical significance.

Several non-significant comparisons nonetheless yielded moderate to large effect sizes. In the iApp group, lower post-test scores were observed for both the isolation/depression subscale (large effect) and the glorification/normalization subscale (moderate effect). In the dApp group, a moderate effect was found for the stigma subscale, reflecting higher post-test scores, and a large effect-size estimate was observed for suicide literacy in the direction of lower post-test scores; this latter estimate should be interpreted cautiously, as it was based on only four non-zero paired differences.

Between-group comparisons

Between-group comparisons of change scores using Mann–Whitney U tests indicated a significant difference for suicide literacy (LOSS-SF), with greater improvement in the iApp than the dApp condition. For the glorification/normalization subscale, the between-group difference did not reach statistical significance, though the effect size was moderate, reflecting a pattern of lower scores in iApp relative to dApp. No significant between-group differences were found for the stigma subscale, the isolation/depression subscale, or formal help-seeking intentions.

4.4.4 Acceptability and barriers

Among iApp completers ($n = 12$), usability ratings were high across most dimensions. All participants agreed or strongly agreed that they had the necessary resources and knowledge to use the application and that it was easy to use. A large majority also reported a clear understanding of the content, a positive interaction with the application, and willingness to recommend it to others. Perceived usefulness in daily life received the lowest endorsement, and feeling supported despite online delivery showed moderate endorsement. The most commonly reported barriers to engagement were forgetting to use the application and lack of time; technical barriers

such as internet connectivity problems or app-related difficulties were infrequently endorsed.

CHAPTER 5.

Conclusions

5.1 Summary of the main findings

5.1.1. Psychometric validation of culturally sensitive measures of suicidal ideation, suicide stigma, and suicide literacy

This thesis provides evidence supporting the psychometric validity of culturally sensitive measures assessing suicidal ideation, suicide stigma, and suicide literacy in Spanish-speaking populations. The validation was conducted using samples from both Spain and Latin America, supporting the applicability of these measures across different Spanish-speaking contexts.

The psychometric analyses indicate that the overall factor structures of the SIDAS, the SOSS, and the LOSS were largely consistent with their original versions (Batterham et al., 2013b; Van Spijker et al., 2014). Both the SIDAS and the SOSS retained their proposed latent structures, in line with previous validations conducted in other cultural contexts (Aldalaykeh et al., 2020; Gauvin et al., 2021; Ludwig et al., 2020b). In contrast, the validation of the LOSS required item removal and scale reduction, resulting in a shorter version with improved psychometric functioning. Similar adaptations have been reported in prior cross-cultural validations, suggesting that certain suicide literacy items may be particularly sensitive to cultural interpretation (Gupta et al., 2023; Han et al., 2017a).

Across the validated measures, reliability indices were adequate, and evidence of scalar measurement invariance by gender was obtained where applicable. The examination of gender invariance across multiple suicide-related instruments supports the comparability of scores between men and women and strengthens the interpretation of gender-based differences in suicidal ideation, stigma, and suicide literacy.

Taken together, the availability of these validated measures provides a solid foundation for the empirical characterization of suicide-related constructs in Spanish-speaking populations, as has been done in previous research in other cultural contexts

(Jahan et al., 2023; Ludwig et al., 2020a; Nakamura et al., 2021). Reliable and culturally sensitive assessment of these constructs enables systematic examination, thereby underpinning the exploratory analyses conducted in the subsequent study of this thesis.

5.1.2. Characterizing suicide literacy and stigma in Spanish-speaking adults: levels, differences, and predictive factors

The exploratory analysis conducted in a large Spanish-speaking adult sample (N= 678) revealed a persistent presence of suicide-related stigma alongside a moderate level of suicide literacy. Stigmatizing perceptions predominantly frame suicide in relation to depression and social isolation, with individuals who die by suicide commonly characterized as lost, disconnected, or isolated. This characterization is largely consistent with the close association between suicidal behaviour and experiences of social disconnection and relational distancing described in the literature (Calati et al., 2019; Motillon-Toudic et al., 2022).

In parallel, participants demonstrated an intermediate level of knowledge about suicide. While understanding of the causes and nature of suicidal behaviour was relatively higher, notable gaps were identified in knowledge of warning signs and symptoms that could facilitate early recognition and awareness of suicide risk.

Given the relevance of sociocultural context in shaping suicide-related attitudes and knowledge, marked regional differences emerged between Spanish and Latin American participants. Individuals from Latin America (predominantly from Mexico) exhibited higher levels of suicide stigma and greater endorsement of glorifying or normalizing representations of suicide compared to those from Spain, a pattern that may be understood within culturally embedded ways of relating to death and loss described in the Mexican context (Gutierrez et al., 2020). These differences were also reflected in exposure patterns, as participants from Latin America reported more frequent experiences of suicide within their social environment, which may

reflect broader epidemiological trends in the countries represented (INE, 2025; Instituto Nacional de Estadística y Geografía, 2025).

In terms of suicide literacy, participants from Latin America demonstrated lower overall levels of knowledge than their Spanish counterparts. While Spaniards showed greater understanding of suicide causes and warning signs, Latin American participants displayed comparatively higher knowledge of risk factors.

The findings also confirmed a robust association between suicide literacy and suicide stigma. Lower levels of knowledge about suicide were systematically linked to more stigmatizing attitudes, replicating patterns consistently reported in previous research across different populations (Jafari et al., 2025; Jahan et al., 2023; Ludwig et al., 2021). This inverse association was observed across multiple literacy domains, particularly those related to the causes of suicide and to treatment or prevention, suggesting a broad link between knowledge gaps and stigma.

This pattern remained evident when sociodemographic characteristics were taken into account, with specific aspects of suicide literacy (especially knowledge about causes and treatment) emerging as key factors associated with lower levels of stigma.

In addition to literacy–stigma associations, the study identified several sociodemographic, contextual, and clinical factors that systematically differentiated levels of suicide stigma and suicide literacy. Consistent with prior evidence, older age and male gender were associated with lower levels of suicide literacy and higher levels of suicide stigma, respectively (Batterham et al., 2019; Khatri et al., 2025; Ludwig et al., 2021; Morgan et al., 2025). In contrast, and consistent with emerging findings suggesting a complex link between religiosity, suicide stigma, and suicide literacy, stronger religious or spiritual beliefs emerged as a salient factor associated with both higher stigma and lower levels of knowledge about suicide (Fekih-Romdhane et al., 2023; Gearing & Alonzo, 2018).

Contextual factors further contributed to these patterns, as individuals who reported limited knowledge of available help resources in situations of suicidal risk tended to show higher levels of stigma. Finally, clinical characteristics were also differentially associated with stigma dimensions, with higher levels of suicidal ideation linked to greater endorsement of stigmatizing and depressive representations of suicide. This association is particularly relevant in light of evidence indicating that internalized stigma has been associated with reduced help-seeking and the “why try” effect, a process characterized by disengagement from recovery-oriented behaviours (Corrigan et al., 2015).

Overall, these findings provide a comprehensive characterization of suicide literacy and suicide stigma within a Spanish-speaking adult sample, highlighting systematic regional differences, the close interconnection between knowledge and attitudes, and the role of key sociodemographic and clinical factors. Taken together, this evidence informed the importance of design and development of an intervention aimed at reducing suicide stigma, increasing suicide literacy, and promoting help-seeking behaviours, addressing a clear gap in the literature on such interventions tailored to Spanish-speaking populations.

5.1.3. Design and development of a mobile application for addressing suicide stigma, literacy, and help-seeking: Breaking the Silence

In parallel with the growing interest in suicide stigma as a distinct and modifiable target for prevention efforts (Batterham et al., 2022), intervention strategies specifically designed to address suicide stigma in Spanish-speaking populations remain scarce. Within this context, the present dissertation advances the development of Breaking the Silence (BreakSi), a digital intervention designed to address suicide stigma, enhance suicide literacy, and promote help-seeking among Spanish-speaking adults. The formulation of BreakSi was informed by existing theoretical and empirical work in the field, as well as by the broader characterization of stigma, knowledge gaps, and contextual factors identified across the preceding studies of this dissertation.

BreakSi was conceived as a multicomponent mobile application integrating four core strategies: education, indirect contact, cognitive flexibility, and values-based actions. Educational content and indirect contact were incorporated as they constitute central components of many existing stigma-reduction interventions, particularly those targeting mental health-related stigma and discrimination (Gronholm et al., 2017; Mehta et al., 2015). Together, these strategies provide a structured framework for addressing inaccurate beliefs, stereotypes, and affective responses commonly associated with suicide stigma.

In addition, BreakSi integrates cognitive flexibility and values-based actions, drawing on intervention approaches that have demonstrated utility across a range of mental health conditions and populations (Gaudiano et al., 2017; Krafft et al., 2018). By targeting rigid and automatic belief patterns, the cognitive flexibility component is intended to facilitate the questioning of entrenched myths and prejudicial assumptions associated with suicide, consistent with evidence linking psychological inflexibility to stronger stigmatizing attitudes (Levin et al., 2016; Masuda et al., 2007). Likewise, the inclusion of values-based component allows the intervention to extend beyond the modification of stigmatizing beliefs by explicitly engaging the behavioural dimension of stigma. Drawing on evidence linking personal values to both discriminatory responses and help-seeking-related stigma, this component facilitates reflection on actions aligned with personally meaningful values, thereby addressing not only attitudinal representations but also individuals' willingness to act in ways that reduce social distance, discrimination, and barriers to help-seeking (Lannin et al., 2020; Norman et al., 2008).

In terms of its delivery and evaluation, BreakSi was designed as a fully online, self-guided mobile application, structured to be completed independently by participants over a 10-day period. Throughout the intervention, participants received automated email messages and in-app notifications intended to prompt continued engagement, including reminders when activity decreased and encouraging messages when progress was maintained. This configuration reflects the growing use

of mobile and other digital modalities in suicide prevention, while also acknowledging that robust evidence, particularly for self-guided, stand-alone applications, remains emergent (Braciszewski, 2021; Melia et al., 2020).

Building on this foundation, the following study conducts a mixed-methods feasibility evaluation of BreakSi. The quantitative evaluation focuses on feasibility and engagement indicators, alongside preliminary trends in suicide stigma, literacy, and help-seeking. Complementarily, the qualitative inquiry provides an in-depth understanding of participants' experiences with the intervention, informing refinement and future optimization.

Informed by this feasibility phase, a subsequent RCT with a crossover design is planned, in which participants are allocated to immediate or delayed access to the BreakSi. Within this dissertation, results are presented as initial insights and are primarily based on participants who completed the mobile application, encompassing preliminary indicators of change, comparisons across allocation conditions, and acceptability and usage-related outcomes among those allocated to immediate access. Together, these findings are intended to inform intervention refinement and the design of future efficacy testing.

5.1.4. Feasibility, preliminary effects, and participants' experiences with Breaking the Silence

Study 3 examined the feasibility and acceptability of BreakSi using a mixed-methods design, integrating quantitative indicators (Study 3.1) and qualitative insights (Study 3.2). Quantitative results indicated rapid recruitment and high baseline completion, alongside substantial drop-off before intervention initiation (i.e., download/first use), a pattern consistent with other brief digital interventions (Bremer & Sarker, 2023). Among those who initiated the intervention, completion within the intended window was adequate, and acceptability ratings were generally high, reflecting usability and clarity, perceived capability/resources, and the perceived suitability of online delivery, with comparatively lower endorsement of day-to-day usefulness. Barriers were predominantly everyday constraints

(time/forgetting) rather than technical difficulties, suggesting low technical burden among engaged users.

Safety was addressed through explicit consideration of suicidal ideation and the use of a predefined protocol to provide help-seeking recommendations and access to support resources when needed.

Preliminary quantitative patterns were broadly consistent with BreakSi's intended targets. The clearest shifts emerged in specific stigma-related dimensions, with significant reductions in the normalisation of suicide and in isolation/depression attributions following programme completion. By contrast, changes in stigma attitudes were comparatively modest, suggesting that more deeply held attitudes may be harder to shift (Lannin et al., 2020; Oexle et al., 2025).

Suicide literacy increased significantly following BreakSi use, with the clearest gains in knowledge about causes and risk factors. In contrast, changes were more limited for some domains (e.g., warning signs and treatment/prevention), indicating a less uniform pattern of improvement across literacy components.

Formal help-seeking intentions showed limited short-term change, a pattern consistent with similar brief digital interventions (Han et al., 2017b; Jones et al., 2020). In contrast, qualitative findings (Study 4.2) suggested increased readiness to offer support to others, which is addressed in the following section.

Finally, exploratory post-intervention patterns in clinical variables showed significant decreases in depressive symptoms, alongside a smaller downward trend in anxiety.

These quantitative findings provide an initial indication of feasibility and target-aligned patterns, while the qualitative component further clarifies how participants experienced BreakSi, including implementation-relevant feedback and the types of changes they reported.

Additionally, qualitative data from in-app open-ended prompts, post-intervention feedback, and follow-up interviews converged in describing BreakSi as a clear, approachable, and low-effort intervention, with an appropriate tone for suicide-related content. Participants consistently described the material as understandable and didactic, often highlighting concrete data, visual materials, and practical examples as helpful for making sensitive content easier to engage with. Reflections on the myths were particularly salient, with several participants recognising previously held socially shared misconceptions and describing a more nuanced understanding of suicide-related distress.

Participants also framed BreakSi as a useful and practical resource that could support prevention by increasing awareness and offering guidance on how to respond to suicidal ideation, especially for those with limited prior knowledge. Content remained salient beyond completion, with all interviewed participants recalling at least one highlighted element, such as prevalence information, myth-related content, examples and contact-based materials, and guidance on how to support someone at risk. Implementation-relevant feedback was generally favourable, with many participants reporting they would not change anything, while the most consistent refinement target concerned navigation and continuity, such as clearer progress indicators, smoother transitions between sections, and easier resumption of use.

Moreover, participants described action-oriented intentions and practical takeaways following BreakSi. Reflections most commonly centred on supportive listening and being present with difficult emotions, alongside a more empathic and non-judgmental stance toward others. Participants also emphasised the value of open communication about suicide, which is widely recognised as relevant to prevention efforts (Pirkis et al., 2023; Zalsman et al., 2016). In addition, some participants described broader shifts toward proactive support, including accompanying others, paying closer attention to warning signs, and seeking information about how to respond.

Participants frequently described acquiring practical support and communication strategies. Many also described increased perceived capability and willingness to offer help, and, for some, to seek help when needed, although this latter aspect was more evident in qualitative accounts than in quantitative patterns (Study 4.1). Emotional responses were generally described as manageable, with some participants reporting empathy, relief, or hope following engagement with the content. Finally, qualitative accounts suggested continued reconsideration of prior beliefs and attitudes toward suicide, complementing the shifts observed in stigma-related domains.

Together, these qualitative insights complement the quantitative findings by clarifying how participants understood and used BreakSi, what they retained, and the kinds of action-oriented responses they reported.

5.1.5. Initial insights from the Breaking the Silence randomized control trial

Using early available data from an ongoing RCT with a crossover design and focusing on participants who completed the assigned mobile application, Study 5 provides initial insights into the preliminary efficacy of BreakSi on suicide stigma, suicide literacy, and help-seeking intentions, as well as comparing patterns between the immediate-access and delayed-access conditions.

Overall, the patterns observed here are consistent with the feasibility and acceptability study (Study 3) and extend those findings with early evidence from a randomized cohort.

The clearest preliminary effect was observed for suicide literacy, which showed a significant pre-post improvement in the immediate-access condition but not in the delayed-access condition. This finding is particularly noteworthy, as suicide literacy has been consistently identified as one of the strongest predictors of lower stigma across diverse populations (Batterham et al., 2013a; Ludwig et al., 2021; Nakamura et al., 2021) and as a key facilitator of help-seeking behaviour (Calea et al., 2014; Cruwys

et al., 2018). Consistent with this, our own exploratory study in Spanish-speaking individuals found that lower suicide literacy significantly predicted higher stigmatizing attitudes (Pierantonelli et al., 2024).

In contrast, suicide-stigma domains displayed a more heterogeneous pattern: stigmatizing attributions showed no clear change, while isolation/depression-related beliefs showed a tentative, non-significant decrease following BreakSi completion. Although preliminary and limited in statistical power, this latter pattern is encouraging and warrants replication in the full RCT, where larger sample sizes will allow more sensitive detection of potential effects.

Glorification/Normalization scores showed an encouraging pattern, as they increased significantly in the delayed-access condition during the waiting period, but not after BreakSi completion, where scores showed a non-significant decrease of moderate magnitude. The fact that BreakSi doesn't increase the glorification is a notable result given prior reports of unintended increases in suicide normalization in stigma-focused interventions (Kennedy et al., 2020), and it is clinically relevant because higher normalization has been linked to lower help-seeking intentions and greater likelihood of current suicidality (Oexle et al., 2022b). However, the increase observed in the waitlist condition during the waiting period should be interpreted with caution. In a small sample without active intervention, this pattern may reflect natural temporal fluctuation, including regression to the mean or incidental exposure to suicide-related media content, rather than a directional change in attitudes. This alternative explanation cannot be ruled out at this stage and should be examined in the full RCT with adequate power and systematic monitoring of external exposure.

Formal help-seeking intentions showed no significant improvement in either condition, with scores remaining broadly stable over time. This pattern may have been influenced by the very low levels of suicidal ideation and clinical severity in the sample, which likely reduced the sensitivity of the measure to detect meaningful change. Future assessments should therefore capture professional help-seeking more

comprehensively, including beliefs and attitudes and, where feasible, behavioural indicators (Han et al., 2018a; Nakamura et al., 2022; García-Soriano et al., 2024).

In the immediate-access group, acceptability and perceived ease of use were high, and reported barriers were primarily everyday constraints, particularly forgetting and lack of time. This pattern is consistent with findings in Study 3. Notably, completion often occurred on the same day as automated reminders, suggesting that timely prompts may be an actionable lever to facilitate timely completion.

Taken together, Study 3 and Study 5 provide a coherent basis for advancing BreakSi to a full-scale RCT aimed at establishing its efficacy. Importantly, Study 5 is ongoing, with recruitment continuing in accordance with the full RCT protocol (Study 4). As the sample grows, it will be possible to draw firmer conclusions about the impact of BreakSi, with the advantages of random allocation, intention-to-treat analyses, and careful monitoring of stigma domains that may shift in different directions.

5.2 Strengths

This dissertation has several strengths that support the importance of studying the suicide stigma, suicide literacy, and help-seeking intentions in Spanish-speaking populations. In particular, it integrates complementary designs and methods, providing convergent evidence across the validation of assessment tools, exploratory analyses, and the development and preliminary efficacy of a mobile application to address the main variables (suicide stigma, literacy, and help-seeking).

The rigorous validation of instruments measuring suicide stigma, suicide literacy, and suicidal ideation (Study 1) provides a strong methodological foundation. By establishing brief, self-administered measures suitable for online research, this study supports reliable assessment for subsequent analyses and intervention evaluation. Moreover, psychometric quality was strengthened by using methods aligned with item and scale characteristics, including CFA for Likert-type instruments and IRT for dichotomous knowledge items, addressing limitations observed in prior Spanish adaptations (Collado et al., 2023). In addition, the use of Spanish-speaking samples from Spain and Latin America, together with linguistic adaptation, strengthens cultural applicability beyond a single national context. Finally, testing gender-related measurement equivalence through invariance and item-level analyses extends this evidence base, aligning with the limited prior validations that have examined invariance, and supports sound comparisons across demographic groups (Fong et al., 2022; Williams et al., 2018).

Moreover, Study 2 contributes to this dissertation by providing an exploratory, data-driven characterization of suicide stigma and suicide literacy and their correlates in Spanish-speaking contexts. A key strength is the large sample and robust analytic strategy, combining multivariable and hierarchical modelling to estimate the incremental contribution of key predictors. Methodological appropriateness was further enhanced by using outcome-appropriate models (including count regression for knowledge scores) and conducting diagnostic checks and sensitivity analyses to support result stability. Together, these choices provide clear reference points and

key correlates to guide subsequent prevention research and intervention development.

In addition, this dissertation contributes to suicide stigma research through the development of BreakSi, which, to the best of our knowledge, is the first Spanish-language intervention specifically designed to reduce suicide stigma and delivered through a mobile app. This represents an important contribution, as no prior suicide anti-stigma interventions for Spanish-speaking populations were identified in the literature, whether delivered digitally or in person. Its conceptual design also responds to limitations often noted in anti-stigma interventions centred mainly on education and contact, by incorporating cognitive flexibility and values-based components. This broader approach targets not only cognitive and emotional responses, but also attitudinal and behavioural processes of stigma.

The mixed-methods single-arm study evaluating the feasibility, acceptability, and preliminary effects of BreakSi (Study 3) provides an initial test of real-world implementation of the mobile application. It also offers encouraging evidence that the intervention may influence key target variables, such as suicide stigma and suicide literacy, both of which have been identified as important targets in suicide prevention efforts (Ministerio de Sanidad, 2025; WHO, 2021c; Zalsman et al., 2016). In addition, the integration of quantitative outcomes with qualitative user feedback strengthens interpretability by capturing not only signals of change but also the barriers and facilitators shaping engagement and perceived usefulness. Qualitative data also captured action-oriented changes that were less visible in the quantitative findings, particularly participants expressed intentions to speak more openly about suicide, show support, and remain attentive to those who may need help.

In addition, a key strength of the BreakSi protocol (Study 4) is the planned RCT with crossover design, previously applied in stigma-reduction research (Afsharnejad et al., 2023; García-Soriano et al., 2024). This design will also allow more robust conclusions to be drawn regarding the efficacy of BreakSi. An additional methodological strength is the use of randomization stratified by baseline stigma

using empirically informed thresholds derived from prior findings (Study 1). Likewise, its mobile delivery supports validity and aligns with contemporary digital approaches in psychological research (Holmes et al., 2018). Given the sensitivity of the topic, clearly specified safety procedures and access to support resources constitute an additional strength. The protocol also includes daily assessments during the intervention period and follow-up evaluations at 1 and 3 months, supporting the examination of short-term change and maintenance.

This dissertation gains additional value by contributing preliminary evidence from an ongoing RCT (Study 5). The early outcome patterns were consistent with the feasibility findings, reinforcing confidence in the intervention's overall direction at this stage.

The protocol for the BreakSi trial (Study 4) was prospectively registered in ClinicalTrials.gov (Identifier: NCT06759129), underscoring adherence to internationally recognised principles for ethical conduct and trial transparency. All studies included in this dissertation received approval from ethics committees, including the University of Valencia and the Research Ethics Committee of the Community of Aragon. In addition, the results of Studies 1 and 2 were disseminated in open-access formats (Pierantonelli et al., 2024a, 2024b). Finally, Study 2 provides openly available data and analysis code via Open Science Framework (OSF), further strengthening transparency and reproducibility.

5.3 Limitations

The findings of this thesis should be interpreted in light of several limitations.

First, generalisability is constrained by sampling features shared across the empirical studies, including online participation and self-selection (Studies 1, 2, 3 and 4). The samples were skewed toward younger, higher-educated women with low clinical symptomatology, which may limit applicability. In addition, although the inclusion of participants from Spain and Latin America broadens the scope, results should not be assumed to reflect all Spanish-speaking settings equally, particularly when country representation is uneven (Studies 1 and 2).

Second, design-related constraints limit inference. Given the cross-sectional design, the analyses cannot establish causal or directional relationships between suicide literacy, stigma, and related factors (Study 2). Likewise, the single-arm design used to examine feasibility, acceptability, and preliminary effects does not allow attribution of change to the intervention, as improvements may reflect time or expectancy effects (Study 3). Likewise, the initial randomized insights (Study 5) were derived from a post-randomization completer subset, so findings should be read as preliminary patterns among engaged users rather than definitive intervention effects.

Third, measurement limitations should be acknowledged. Key constructs were assessed primarily via self-report, which may be affected by reporting biases, particularly for sensitive topics such as suicidal ideation, stigma, and help-seeking intentions (Studies 1, 2, 3 and 5). In Studies 3 and 5, this concern was partially mitigated by excluding participants with high social desirability, but it cannot be fully ruled out. In addition, brief measures used across studies may not capture all facets of the constructs.

Finally, in a feasibility context, qualitative feedback helps identify barriers and facilitators, yet findings may reflect early adopters and may not fully capture challenges that would emerge in larger, more diverse trials (Study 3).

5.4 Potential implications and future directions

5.4.1 Theoretical implications

The conceptual and methodological foundations of suicide stigma research remain under active development. In this context, empirical work can help refine existing accounts, clarify key constructs, and identify mechanisms that warrant further theoretical attention. Building on the integrated evidence generated across this thesis, several theoretical implications can be drawn.

First, this thesis aligns with contextual perspectives that call for decentring purely clinical or individual explanations and strengthening attention to the social and environmental conditions that shape suicidality (Al-Halabí & Fonseca-Pedrero, 2024; Na et al., 2025). By examining suicide stigma and related processes, this work contributes to a broader understanding of how socially embedded factors may influence how suicide is perceived, discussed, and responded to within communities. This position is consistent with public health frameworks emphasising the role of social determinants and the need for universal and selective prevention approaches that extend beyond exclusively clinical models (Gallagher et al., 2025; Pirkis et al., 2023).

Second, this thesis contributes to a more context-sensitive understanding of the cultural, demographic, and clinical factors that may shape suicide stigma and suicide literacy. By highlighting how these constructs vary across social and cultural settings, his dissertation supports the development of more precise explanatory accounts and encourages differentiated avenues for research and action across contexts. For example, the findings draw attention to religious beliefs as a potentially influential contextual indicator associated with both stigma and literacy. More broadly, they reinforce the view that suicide stigma and literacy are strongly context-dependent and should be examined within specific cultural settings rather than assumed to be readily generalisable across populations, consistent with prior work in this area (Han et al., 2018b).

Third, integrating cognitive flexibility and values-based strategies extends prevailing conceptual approaches to stigma reduction. These components have shown effectiveness in interventions targeting other forms of stigma yet have rarely been integrated into suicide stigma interventions. Their inclusion underscores a plausible pathway to strengthen stigma-reduction effects and to address limitations reported in prior approaches that rely predominantly on education or contact-focused strategies, and not on the behavioural dimension of stigma.

Fourth, this thesis highlights that engagement and user interpretation are part of the change process in suicide prevention interventions. Participant feedback supports theorising about these mechanisms from the user perspective. Qualitative accounts indicated that participants often translated intervention content into actionable ways of responding to suicide-related situations and into shifts in suicide-related beliefs, suggesting conceptual overlap with elements commonly targeted in community gatekeeper approaches (Putri et al., 2025). More broadly, these insights support the view that theoretical models should account not only for intended content targets (e.g., stigma and literacy) but also for how users interpret content into perceived competence, response strategies, and reduced judgment, with implications for implementation-oriented theories of intervention uptake (Chen et al., 2024).

5.4.2 Clinical implications

This doctoral dissertation yields several clinically and practically relevant implications for suicide prevention across both healthcare and community settings.

First, this thesis highlights the clinical relevance of addressing suicide stigma as a cross-cutting priority in suicide prevention. Beyond hindering disclosure and help-seeking, stigma can contribute to broader processes of social exclusion that reduce timely access to support and the acceptability of care. In this sense, the present work is aligned with current international efforts that recognise stigma reduction as a necessary component of effective and comprehensive suicide prevention strategies (Thornicroft et al., 2022, 2024).

Second, a key implication concerns the availability of brief, culturally adapted instruments to support screening and monitoring in Spanish-speaking contexts. In clinical settings, efficiently assessing suicidal ideation severity is essential given that lifetime prevalence estimates of suicidal thoughts are non-trivial (Coppersmith et al., 2023). Digitally deliverable, concise measures are particularly valuable because they support low-threshold identification and follow-up beyond face-to-face encounters and align with the increasing role of digital approaches in contemporary suicide prevention (Burr et al., 2025). In addition, brief assessments of suicide stigma and literacy are not only more feasible to deploy at scale but also help to detect barriers that may hinder disclosure and help-seeking, thereby identifying intervention targets that can be addressed proactively.

Third, the thesis offers practical guidance for designing suicide prevention initiatives that reduce stigma and support help-seeking. Overall, the findings suggest that interventions are more likely to be effective when they are tailored to the target population rather than delivered as “one-size-fits-all” messages (Ashton et al., 2018; Thornicroft et al., 2022). In practice, this means focusing on barriers that hinder disclosure and access to care, and routinely providing clear, concrete information on how and where to seek support. Improving suicide literacy within social networks may also strengthen informal support, including encouraging recommendations for

professional help when suicide risk is evident (Cruwys et al., 2018). Finally, the results highlight the need to explicitly challenge narratives that normalize or glorify suicide, as these may undermine prevention efforts and discourage timely help-seeking (Oexle et al., 2022b).

Finally, the BreakSi mobile application illustrates how brief, technology-enabled interventions can be incorporated as a practical component of suicide prevention in Spanish-speaking contexts. Clinically and in community settings, these findings support the use of low-threshold digital tools to complement existing pathways by targeting modifiable barriers (i.e., stigma, misinformation, and limited preparedness to offer support) while facilitating connection with existing support services. This also highlights the need to implement such tools with clear safety procedures and engagement supports to maximise reach.

5.4.3 Future directions

Future research should build on this dissertation by strengthening the evidence base across three complementary areas: measurement, effectiveness, and real-world implementation in diverse Spanish-speaking contexts.

First, although the brief instruments validated in this thesis provide a strong foundation for screening and research, further psychometric work is warranted to expand their applied utility. Priorities include evaluating temporal stability (test-retest reliability), broader measurement invariance across relevant groups (e.g., region, age, education), and testing whether the scales relate as expected to other relevant measures and to clinically meaningful outcomes, including their ability to predict important outcomes over time.

Second, the generalisability and interpretability of the observed relationships would benefit from replication in larger, more diverse samples, particularly those including more men and participants with higher clinical symptomatology. Longitudinal designs would be especially valuable to clarify directionality among stigma, literacy, and help-related behaviours, and to test whether changes in proposed targets are sustained over time. In parallel, qualitative inquiry in clinically relevant and underrepresented groups could deepen understanding of perceived barriers, cultural nuances in language and meaning, and mechanisms of change that may not be fully captured by quantitative measures.

Third, an adequately powered controlled evaluation of BreakSi is currently underway to establish effectiveness and the durability of effects, including follow-ups to assess maintenance. This trial should also clarify how the intervention works (e.g., by reducing suicide glorification/ normalization or increasing literacy) and for whom it works best (e.g., across gender and cultural contexts), to guide further optimisation and tailoring. In addition to establishing overall efficacy, the full RCT represents an opportunity to examine mechanisms of change through mediation analyses. In particular, testing whether improvements in suicide literacy mediate reductions in stigma, and whether increased cognitive flexibility or values-alignment mediates

behavioural outcomes such as help-seeking intentions or supportive responding, would provide theoretically grounded evidence that is currently absent from the suicide stigma intervention literature. Including such analyses in the pre-registered analysis plan would substantially strengthen the contribution of the trial beyond a simple efficacy test.

Fourth, future work should extend intervention development and evaluation to additional populations for whom stigma and literacy may play distinct roles, such as individuals experiencing suicidal ideation (including self-stigma processes), people bereaved by suicide, and key gatekeeper groups (e.g., healthcare staff, educators, first responders). In these groups, studies should prioritise behavioural outcomes (e.g., support actions, referrals, and resource use) and consider co-designed adaptations to optimise acceptability, cultural fit, and safety. Relatedly, future studies should seek to include samples with sufficient representation of individuals reporting suicidal ideation to enable full psychometric evaluation of the PSSQ, including all three subscales. Given the theoretical and clinical relevance of self-stigma in suicidality, establishing the scale's utility across its complete factor structure in Spanish-speaking populations remains an important methodological priority.

Finally, given that improvements in stigma and literacy may not be sufficient to substantially increase formal help-seeking on their own, future interventions should also investigate and address other determinants of help-seeking (e.g., norms, self-efficacy, access barriers, service navigation) and, where possible, assess behaviours as well as intentions.

5.5 General conclusions

This doctoral thesis provides a comprehensive contribution to the understanding, assessment, and intervention of suicide stigma in Spanish-speaking populations. By integrating psychometric validation, cross-sectional analysis, and the development and evaluation of a digital intervention, the thesis advances the field from measurement to application, addressing key gaps in both research and practice. Across five complementary studies, the thesis generated empirical evidence relevant to multi-component, technology-enabled prevention approaches. Overall, the main findings were as follows:

1. The Spanish versions of the SOSS-SF and SIDAS, together with a refined 10-item Spanish LOSS-SF, showed good psychometric performance, including evidence of reliability, gender measurement invariance, and support for their proposed factor structures, supporting their use to assess suicide stigma, suicide literacy, and suicidal ideation severity across Spanish-speaking contexts, including Spain and Latin America.
2. In a Spanish-speaking sample, suicide stigma was present, and suicide literacy was moderate. Spaniards reported lower stigma and higher literacy; in comparison, Latin American participants reported higher stigma, lower literacy, and greater suicide glorification and normalization.
3. Lower suicide literacy appeared more common among older individuals and those reporting stronger religious/spiritual beliefs. Higher suicide stigma tended to be more pronounced among people with lower literacy, men, those with stronger religious/spiritual beliefs, and those who did not know how to find help. Suicide glorification or normalization was more pronounced by region (in Latin America) and was also higher among participants with lower knowledge about suicide treatment and prevention. By contrast, the depression or isolation conception of suicide was not clearly explained by sociodemographic or literacy factors and appeared more closely related to anxiety symptoms.

4. A mobile application (Breaking the Silence; BreakSi - Rompiendo el Silencio; RomSi in Spanish) was developed, integrating four components with evidence of effectiveness in stigma-reduction interventions: education, indirect contact, cognitive flexibility, and values. The thesis also specified a crossover randomised controlled trial protocol to evaluate BreakSi for reducing suicide stigma, improving suicide literacy, and supporting help-seeking, including stratified randomisation based on baseline stigma levels, with two follow-ups and daily assessments to support safety monitoring and capture early and sustained change.
5. BreakSi was feasible and well-received among participants who used the app. They also showed the expected pattern of early changes, including lower suicide glorification/normalization and fewer depressive or isolation-related views of suicide, alongside improved suicide literacy, whereas changes in suicide stigma and formal help-seeking were small and less consistent.
6. BreakSi user feedback suggested meaningful shifts in attitudes and readiness to act, including greater willingness to listen without judgment, increased confidence in how to respond to someone at risk, and more proactive intentions to notice warning signs and offer support. Participants also highlighted gaining concrete communication strategies and a greater openness to discussing suicide directly and responsibly, while describing the app as acceptable and useful, with practical suggestions to improve continuity and engagement.
7. Early results from an ongoing RCT suggest that BreakSi shows promise effects among participants who engage with the intervention, with the clearest preliminary improvements observed in suicide literacy and potentially favourable patterns in suicide glorification/ normalization, while changes in other stigma domains and formal help-seeking were smaller and less consistent. Importantly, these preliminary outcome patterns largely converged with the feasibility findings, strengthening confidence in the consistency of early signals across study phases.

In sum, this doctoral dissertation provides new empirical insights into suicide stigma and suicide literacy in Spanish-speaking contexts and their relevance for prevention efforts. Together, these contributions provide a foundation for future research and prevention initiatives aimed at reducing stigma-related barriers to timely support and fostering more open, responsible, and empathetic conversations about suicide across clinical and community settings.

CHAPTER 6.

Summary in Spanish

Resumen en español

6.1 Introducción

6.1.1 El suicidio: un reto para la salud pública

El suicidio es un problema de salud pública global de naturaleza multifactorial y con amplias repercusiones personales y sociales (Al-Halabí & Fonseca-Pedrero, 2024; Turecki & Brent, 2016). Su prevención sigue siendo un reto debido a ambigüedades conceptuales, limitaciones en los datos y barreras socioculturales que dificultan la búsqueda de ayuda y la implementación de políticas (Lovero et al., 2023). El texto aborda tres dimensiones interrelacionadas: la definición y complejidad epidemiológica del suicidio, las principales estrategias globales de prevención, y las barreras estructurales, socioculturales e individuales que limitan su eficacia, con factores transversales como el estigma y las desigualdades sociales como hilo conductor.

Definición y epidemiología

El suicidio es un fenómeno multidimensional, multicausal y transdiagnóstico, cuya delimitación conceptual sigue siendo un reto, ya que no existe consenso sobre su definición (Goodfellow et al., 2018). La Organización Mundial de la Salud (OMS, 2014) ofrece definiciones operativas del suicidio y del intento de suicidio, pero reconoce explícitamente el debate terminológico existente. Una dificultad añadida es la evaluación de la intención suicida, que puede quedar oculta por ambivalencia emocional o disimulo deliberado (Brown et al., 2005). Pese a ello, existe cierto consenso en conceptualizar la “suicidalidad” (en inglés, *suicidality*) como un continuo que va desde la ideación hasta el suicidio consumado (Giner et al., 2016). La nomenclatura de Silverman et al. (2007) distingue tres dominios (ideación, comunicación y conducta suicida) diferenciados por la intención y el resultado del acto, aunque ambos criterios presentan limitaciones prácticas (Teismann et al., 2024; Bertolote & Wasserman, 2021). Estas dificultades también se reflejan en los sistemas de clasificación psiquiátrica: aunque el riesgo de suicidio aparece en más de 50 trastornos del Manual Diagnóstico y Estadístico de los Trastornos Mentales (DSM),

solo figura como criterio diagnóstico formal en el episodio depresivo mayor y el trastorno límite de la personalidad (Giner et al., 2016; Felthous et al., 2023). El DSM-5-TR reclasificó el Trastorno de Conducta Suicida en una categoría de menor relevancia clínica, argumentando su heterogeneidad etiológica y el riesgo de estigmatización (APA, 2022; Oliogu & Ruocco, 2024).

En cuanto a su magnitud, la OMS (2025) estima que más de 720.000 personas mueren por suicidio cada año, siendo la tercera causa de muerte entre los 15 y los 29 años, con aproximadamente el 75% de los casos concentrados en países de ingresos bajos y medios (PIBM). Sin embargo, las disparidades no se explican únicamente por el nivel de ingresos: existen diferencias marcadas incluso entre países con características similares (Bertuccio et al., 2025), que en parte reflejan variaciones en la certificación de defunciones y factores socioculturales como el estigma (Lew et al., 2022; Snowden & Choi, 2020). Las cifras de mortalidad, además, no reflejan la totalidad del fenómeno: por cada adulto que muere por suicidio, se estima que más de 20 realizan uno o más intentos (OMS, 2014), y alrededor del 9,2% de las personas experimenta ideación suicida a lo largo de su vida (Turecki et al., 2019).

Estrategias globales y enfoques actuales para la prevención del suicidio

La prevención del suicidio está recogida en el Objetivo 3.4 de los Objetivos de Desarrollo Sostenible (ODS) de las Naciones Unidas (ONU, 2015), aunque las proyecciones indican que apenas el 3% de los países analizados alcanzará esta meta si se mantienen las tendencias actuales (Naghavi et al., 2019). Para maximizar los esfuerzos preventivos, la OMS (2014) propone un modelo de tres niveles: intervenciones universales, selectivas e indicadas. Las *universales* se dirigen a toda la población mediante medidas como la restricción del acceso a medios letales, la cobertura mediática responsable o las campañas educativas, con evidencia sólida de su eficacia (Farahbakhsh et al., 2022; Pistone et al., 2019; Torok et al., 2017). Las *selectivas* se orientan a subgrupos de mayor riesgo —como personas LGBTQ+ o con depresión diagnosticada— y han mostrado resultados prometedores cuando se adaptan adecuadamente al contexto (Paudel et al., 2024; Ko et al., 2025). Las

indicadas, dirigidas a quienes ya presentan ideación o conducta suicida, incluyen intervenciones como el apoyo entre iguales o la planificación digital de seguridad (Barrigón et al., 2022; Pfeiffer et al., 2025). Los tres niveles son interdependientes y su integración en una estrategia coordinada y multisectorial tiene un potencial significativo para reducir las tasas de suicidio a nivel poblacional (Hawton & Pirkis, 2024).

La reducción del estigma como prioridad transversal

El estigma actúa como una barrera transversal que limita la eficacia de los tres niveles de intervención, dificultando la aceptación de las estrategias preventivas y la búsqueda de ayuda (OMS, 2021c). Una encuesta global realizada para la Comisión Lancet reveló que el 80% de casi 400 participantes de 45 países consideraron que el estigma y la discriminación pueden ser peores que el propio trastorno mental (Thornicroft et al., 2022), lo que llevó a la Comisión a formular ocho recomendaciones, entre ellas la despenalización del suicidio como vía para avanzar hacia los ODS (Thornicroft et al., 2022, 2024). La evidencia muestra que abordar la desinformación sobre el suicidio mejora la intención de buscar ayuda (Žilinskas & Lesinskienė, 2023) y que los esfuerzos antistigma pueden reducir la ideación y la conducta suicida en poblaciones vulnerables (Niederkrotenthaler et al., 2022; Gilissen et al., 2021).

En España, el primer Plan Nacional de Prevención del Suicidio (Ministerio de Sanidad, 2025) integra la reducción del estigma de forma transversal en sus seis líneas estratégicas, alineándose con el marco recomendado por la OMS.

Obstáculos para la prevención eficaz del suicidio

A pesar del creciente compromiso global, múltiples barreras siguen limitando la eficacia de los esfuerzos preventivos. En 2018, solo 38 naciones habían adoptado un plan nacional de prevención del suicidio (OMS, 2018, 2021a). A nivel estructural, las desigualdades en financiación entre países de ingresos altos (PIA) y PIBM concentran la investigación y las estrategias en los países más ricos, limitando la transferibilidad de la evidencia (Platt et al., 2019; GBD 2021 Suicide Collaborators, 2025), mientras que

el subregistro y la clasificación errónea de los suicidios dificultan la comparabilidad internacional (Bertuccio et al., 2025; Oquendo & Porras-Segovia, 2020). A nivel sociocultural, el estigma y los tabúes no solo condicionan el compromiso político sino que desincentivan la búsqueda de ayuda individual (O'Connor et al., 2023; Reynders et al., 2014), y en algunos contextos la criminalización de la conducta suicida disuade a las personas en crisis de acudir a servicios de atención (Lovero et al., 2023). A nivel individual, la baja alfabetización en suicidio, las barreras de acceso, la desconfianza en los sistemas sanitarios y la ambivalencia ante la búsqueda de ayuda constituyen obstáculos frecuentes (Calea et al., 2014; Bruffaerts et al., 2011; Podlogar et al., 2022; Batterham et al., 2022). Superar estas barreras es un requisito indispensable para avanzar hacia una prevención más eficaz y equitativa (O'Connor & Portzky, 2018).

6.1.2 El estigma en el contexto del suicidio

El estigma constituye una dimensión central en la comprensión de la conducta suicida, con efectos que abarcan desde las actitudes públicas y las prácticas institucionales hasta la autopercepción individual, influyendo en la búsqueda de ayuda, la recuperación y la prevención. Los siguientes apartados examinan sus fundamentos conceptuales, sus principales formas de manifestación en el contexto del suicidio y las características que lo diferencian del estigma asociado a otros trastornos mentales.

Marco conceptual del estigma

"El estigma hace referencia a un comportamiento de exclusión y discriminación que ha jugado un papel en nuestra evolución como especie y está presente en todas las culturas. Esta discriminación se lleva a cabo en base a una marca o etiqueta relacionada con una característica personal o social que devalúa a la persona que la porta [...] Una de las etiquetas con mayor carga estigmatizante en las diferentes culturas humanas es la de la locura; es decir, la asociada a los trastornos y problemas de salud mental" (Muñoz López, 2025, pp. 29–30).

Desde la psicología social, el estigma se conceptualiza como un proceso tripartito que engloba estereotipos, prejuicios y discriminación (Corrigan et al., 2005; Corrigan & Watson, 2002a; Thornicroft et al., 2007). Los estereotipos constituyen el componente cognitivo (esquemas sobre grupos sociales no basados en hechos que varían entre culturas) y en salud mental suelen girar en torno a la peligrosidad, la incompetencia y la cronicidad. Thornicroft et al. (2022) los reencuadran como desinformación, destacando el papel de la alfabetización en salud mental para reducirlos (Jorm, 2000). El prejuicio surge cuando estos estereotipos se asumen como válidos y generan reacciones afectivas negativas como miedo, lástima o ira (Fox et al., 2018). La discriminación, por su parte, es la manifestación conductual del estigma: el trato injusto basado en una identidad devaluada (Brewer, 2007), que genera barreras tangibles en el empleo, la vivienda y el acceso a la atención sanitaria (Corrigan & Watson, 2002a). Junto a estas formas explícitas, la investigación ha identificado formas más sutiles conocidas como microagresiones o discriminación interaccional, que se producen en encuentros cotidianos a través de actitudes de incomodidad o condescendencia (Link & Phelan, 2014; Sue et al., 2007). Este análisis conecta con el marco de Link y Phelan (2003), que describe el estigma como la convergencia de etiquetado, estereotipado, separación, pérdida de estatus y discriminación, sostenidos por el poder social. Aunque estos marcos se desarrollaron en el campo de los problemas mentales, son plenamente aplicables al estigma asociado al suicidio, históricamente ligado a la condena moral, religiosa y legal (Adamiak & Dohnalik, 2023; Yampolsky & Kushner, 2020).

Tipos de estigma y sus consecuencias en el contexto del suicidio

A partir del marco conceptual previo, se distinguen cuatro formas principales de estigma relevantes en el contexto del suicidio: el estigma público, el autoestigma, el estigma estructural y el estigma por asociación, cada uno de los cuales se desarrolla a continuación.

Estigma público

El estigma público hacia el suicidio hace referencia a las actitudes y creencias negativas de la sociedad hacia las personas que experimentan ideación o conducta suicida (Batterham et al., 2013a, 2022). La evidencia sugiere que este estigma opera de forma cíclica: las actitudes estigmatizadoras promueven el aislamiento social, la baja autoestima y la soledad —factores de riesgo reconocidos para la conducta suicida (Van Orden et al., 2010)—, lo que a su vez genera más estigmatización, perpetuando el ciclo (Carpiniello & Pinna, 2017; Demmer, 2015). Las personas con ideación o intentos de suicidio son frecuentemente objeto de estereotipos negativos como egoísmo, debilidad o escasa capacidad de afrontamiento (Carpiniello & Pinna, 2017; Ludwig et al., 2020).

Un factor clave que alimenta este estigma es la desinformación. La alfabetización en suicidio —entendida como el conocimiento que permite reconocer, gestionar o prevenir la conducta suicida (Jorm, 2000)— se asocia de forma consistente con menores niveles de estigma (Batterham et al., 2013a; Ludwig et al., 2021; Jahan et al., 2023), aunque su efecto protector puede depender de factores socioculturales más amplios (An et al., 2024). Además, mejorar la alfabetización en suicidio no solo reduce las actitudes estigmatizadoras, sino que también favorece la búsqueda de ayuda profesional (Calear et al., 2014; Žilinskas & Lesinskienė, 2023).

A. El papel del lenguaje no estigmatizante

El lenguaje no es un medio neutro: a través de procesos de categorización, asociación y evaluación, asigna significado y valor social a las personas y sus experiencias, condicionando las actitudes colectivas (Hayes et al., 2001). Por ello, el uso de un lenguaje no estigmatizante es fundamental, ya que una terminología inadecuada puede reforzar el estigma y agravar la carga que experimentan las personas con experiencia vivida. En esta línea, la Comisión Lancet recomienda emplear un lenguaje centrado en la persona, que enfatice al individuo por encima de su condición o experiencia (Thornicroft et al., 2022).

En España, esta preocupación está presente en múltiples ámbitos, desde asociaciones de prevención hasta organismos profesionales y guías de comunicación responsable (López Vega, 2019; Martínez Vallier, 2025; Consejo General de la Psicología de España, 2024; Ministerio de Sanidad, 2020). Las recomendaciones españolas sobre el lenguaje en torno al suicidio aconsejan evitar formulaciones que impliquen culpa, criminalidad o juicio de valor: se prefiere hablar de "morir por suicidio" frente al uso del verbo reflexivo suicidarse, que puede atribuir una responsabilidad indebida a la persona; se desaconseja el equivalente a "cometer suicidio" por su connotación delictiva; y se evitan expresiones como suicidio "consumado" o "frustrado", que enmarcan la conducta suicida en términos de éxito y fracaso, añadiendo implícitamente una carga de vergüenza y estigma adicional.

Autoestigma

El autoestigma surge cuando las personas aceptan e internalizan las concepciones peyorativas que la sociedad proyecta sobre ellas (Corrigan & Watson, 2002a, 2002b). En el contexto del suicidio, esta internalización menoscaba significativamente la autoestima y la autoeficacia (Carpiniello & Pinna, 2017) y aumenta el malestar psicológico (Scocco et al., 2016), representando el mecanismo por el cual la desaprobación externa se convierte en desvalorización dirigida hacia uno mismo.

Una de sus consecuencias más perjudiciales es la inhibición de la búsqueda de ayuda (Ammerman et al., 2022; Hom et al., 2015; Wyllie et al., 2025). La vergüenza y el miedo al rechazo llevan frecuentemente a las personas con ideación suicida a silenciar sus pensamientos (Fulginiti & Frey, 2018), intensificando el aislamiento social (Hanschmidt et al., 2016). Las personas supervivientes de intentos de suicidio perciben la revelación de su experiencia de forma ambivalente: si bien puede facilitar el apoyo social y la recuperación, también conlleva riesgos como reacciones negativas o intervenciones no deseadas (Sheehan et al., 2019). Además, con frecuencia internalizan creencias estigmatizadoras —describiéndose a sí mismas como débiles o una carga— y tienden a ocultar sus experiencias suicidas (Sheehan et al., 2017a).

Corrigan et al. (2015) conceptualizaron este mecanismo como el efecto "*why try*" ("¿para qué intentarlo?"), por el cual el autoestigma erosiona la motivación para llevar a cabo conductas adaptativas como buscar ayuda profesional. Evidencia reciente confirma la relevancia de este modelo en supervivientes de intentos de suicidio, asociando un mayor autoestigma con mayor depresión y menor recuperación (Sheehan et al., 2020). En conjunto, estos hallazgos subrayan el impacto multifacético del autoestigma y su reconocimiento no solo como barrera para el tratamiento, sino como posible factor de riesgo independiente para el suicidio (Pompili et al., 2003; Reynders et al., 2014).

Estigma estructural

El estigma estructural hace referencia a las leyes, políticas y normas institucionales que restringen las oportunidades de los grupos estigmatizados, ya sea de forma explícita o a través de prácticas aparentemente neutras con efectos perjudiciales (Corrigan et al., 2004; Corrigan & Bink, 2016). En el ámbito de la prevención del suicidio, las políticas suelen priorizar la responsabilidad individual y la gestión del riesgo por encima de la equidad y la reforma estructural (Fitzpatrick, 2022).

En el contexto sanitario, las respuestas institucionales han sido históricamente insuficientes, con programas infrafinanciados y escasos protocolos estandarizados (Mann et al., 2021; OMS, 2014). Ello se refleja en las actitudes estigmatizadoras y las carencias formativas de los propios profesionales (Clement et al., 2015; Wakai et al., 2020), cuyas visiones negativas o moralistas hacia los pacientes con conducta suicida pueden obstaculizar la detección, la intervención y la recuperación (Carpiniello & Pinna, 2017; Boukouvalas et al., 2020). Esto resulta especialmente preocupante dado que una proporción considerable de quienes mueren por suicidio ha tenido contacto previo con los servicios de salud (Luoma et al., 2002; Ahmedani et al., 2019; DelPozo-Banos et al., 2024).

En el plano legal, el intento de suicidio sigue siendo punible en más de veinte países, frecuentemente como herencia del derecho colonial o de códigos religiosos (Mishara & Weisstub, 2016; Ochuku et al., 2022). La criminalización no disuade la

conducta suicida; al contrario, desincentiva la búsqueda de ayuda, fomenta el subregistro y puede asociarse a tasas más elevadas de suicidio (Wu et al., 2022; Lew et al., 2022).

Los medios de comunicación constituyen otra dimensión del estigma estructural. La cobertura irresponsable de suicidios, especialmente de figuras públicas, se ha vinculado a un aumento de las muertes, mientras que la información centrada en el afrontamiento y la recuperación —efecto Papageno— puede tener un efecto protector (Niederkrotenthaler et al., 2010, 2014, 2020; Sinyor et al., 2018). El cumplimiento de las guías internacionales de comunicación sigue siendo esencial (OMS, 2014, 2017), y las campañas bien diseñadas pueden mejorar la alfabetización, las actitudes y la búsqueda de ayuda (Torok et al., 2017).

Estigma por asociación

El estigma por asociación hace referencia al prejuicio y la discriminación dirigidos a personas por su vínculo con alguien estigmatizado, manifestándose frecuentemente a través de la culpa, la vergüenza y percepciones de contaminación (Corrigan & Miller, 2004). En el contexto del suicidio, afecta especialmente a los familiares y allegados de personas con ideación o conducta suicida, con la investigación centrada principalmente en el duelo por suicidio (Evans & Abrahamson, 2020; Goulah-Pabst, 2021).

Cada muerte por suicidio puede exponer a hasta 135 personas y afectar profundamente a unas 60 (Cerel et al., 2019; Berman, 2011), lo que pone de relieve la amplia población potencialmente vulnerable a este tipo de estigma. Las personas en duelo por suicidio frecuentemente enfrentan juicios sociales —como ser culpadas por no haber detectado señales de alerta— y reportan la ausencia de apoyo no enjuiciador como uno de sus principales retos (Cvinar, 2005; McGill et al., 2022). El estigma también actúa como barrera para la búsqueda de ayuda en las primeras horas tras la pérdida (Duval et al., 2023), y se asocia a vergüenza, culpa, secretismo, aislamiento social, depresión y mayor riesgo de suicidio (Wyllie et al., 2025).

El duelo por suicidio se caracteriza además por la búsqueda persistente de explicaciones (Grad, 2011), la culpa (Shields et al., 2017), la ira (Tal Young et al., 2012) y el silenciamiento social (Maple et al., 2010). Las reacciones del entorno son ambivalentes: mientras algunas personas muestran compasión, otras responden con evitación o curiosidad intrusiva, reforzando el aislamiento (Marek & Oexle, 2024). El estigma percibido promueve el secretismo sobre la causa de la muerte, agravando el duelo y dificultando la recuperación (Oexle et al., 2020), aunque la revelación —pese al temor al juicio— puede facilitar el duelo auténtico y movilizar recursos sociales (Oexle et al., 2022). A pesar de la creciente atención a este fenómeno, el estigma por asociación sigue siendo un área escasamente explorada en la investigación empírica (Maple et al., 2018).

Características específicas y diferencias del estigma asociado al suicidio

El estigma asociado al suicidio presenta características que lo diferencian del estigma vinculado a otros problemas de salud mental. Aunque las personas con trastornos mentales tienen un mayor riesgo de conducta suicida (Too et al., 2019), no todas las personas que intentan o mueren por suicidio cumplen criterios para un diagnóstico psiquiátrico (Arsenault-Lapierre et al., 2004).

La conducta suicida genera prejuicios que van más allá de los asociados a las condiciones mentales en general. Junto a estereotipos comunes como la incompetencia o la peligrosidad, se documentan formas de estigma específicas del suicidio, como las percepciones de egoísmo, impulsividad, inmoralidad o búsqueda de atención (Sheehan et al., 2017a). Estudiantes de medicina, por ejemplo, valoraron el suicidio como más estigmatizado que la depresión o el cáncer de mama, y lo asociaron a la menor disposición a revelar la propia experiencia (Cryer et al., 2020).

Otra distinción relevante es la percepción de recuperación: mientras que los síntomas de otros trastornos mentales se consideran frecuentemente manejables, la conducta suicida puede convertirse en un elemento definitorio de la historia vital de una persona, dejando en ocasiones marcas visibles que refuerzan una visión desacreditadora. En consecuencia, la recuperación se percibe como menos probable

en personas con antecedentes de intentos de suicidio que en aquellas con depresión sin ideación suicida (Sheehan et al., 2017b).

El estigma por asociación también adopta formas más severas en el contexto del suicidio. A diferencia de las familias de personas con problemas de salud mental, los allegados de quienes mueren por suicidio se enfrentan a estereotipos más duros de culpa, disfunción e infirilidad (Sheehan et al., 2017; Corrigan et al., 2018), y reportan niveles significativamente más elevados de estigma percibido, culpa y vergüenza en comparación con quienes afrontan otros tipos de pérdida (Pitman et al., 2016). El suicidio es descrito como una "muerte diferente" que, a diferencia de la muerte por cáncer o tragedias colectivas, tiende a ser silenciada o socialmente evitada, dejando a los allegados con un duelo no reconocido y escaso apoyo público (Chapple et al., 2015). Esta carga también se extiende al plano físico: una revisión sistemática encontró que los familiares en duelo por suicidio presentan mayor riesgo de enfermedades cardiovasculares, hipertensión, diabetes y peor salud general en comparación con otros tipos de duelo (Spillane et al., 2017).

Reconocer estas dimensiones específicas es fundamental, ya que subrayan la necesidad de intervenciones adaptadas a los retos particulares de cada población afectada.

6.1.3 Evaluación del estigma asociado al suicidio

La evaluación sistemática del estigma asociado al suicidio es un paso fundamental para comprender sus mecanismos, prevalencia e impacto. Pese a la creciente disponibilidad de instrumentos psicométricos, la investigación sigue enfrentando retos de claridad conceptual, rigor metodológico y generalizabilidad cultural.

Fortalezas y limitaciones de los instrumentos existentes

El uso de instrumentos para evaluar el estigma asociado al suicidio ha crecido considerablemente, con una aceleración notable a partir de 2019 (Nicholas et al., 2023). Entre los más empleados se encuentran el Suicide Opinion Questionnaire (SOQ;

Domino et al., 1980), la Stigma of Suicide Scale (SOSS; Batterham et al., 2013) y el Grief Experience Questionnaire (GEQ; Barrett & Scott, 1989). La mayoría se centra en el estigma público, con menor atención al autoestigma o al estigma percibido.

La SOSS es uno de los instrumentos más sólidos: desarrollada específicamente para evaluar el estigma público hacia personas que han muerto por suicidio, consta de tres subescalas (estigma, aislamiento y glorificación) y ha mostrado buenas propiedades psicométricas en diversas lenguas, incluido el español (Collado et al., 2023). Destaca además por su sensibilidad al cambio en estudios de intervención, siendo uno de los pocos instrumentos capaces de capturar reducciones del estigma a lo largo del tiempo (Perceval et al., 2020).

En cuanto a la alfabetización en suicidio, el instrumento más utilizado es la Literacy of Suicide Scale (LOSS; Caelear et al., 2022), disponible en versión larga (26 ítems) y corta (12 ítems), que evalúa el conocimiento en cuatro dominios mediante un formato verdadero/falso/no sé. Su principal fortaleza es ofrecer una medida estandarizada que reduce la dependencia de ítems ad hoc (Torok et al., 2017), y ha sido validada en varios contextos culturales (Arafat et al., 2021; Han et al., 2017; Hernández-Torres et al., 2021). Los niveles más altos de alfabetización se asocian consistentemente con menor estigma (Batterham et al., 2013a; Ludwig et al., 2021; Jahan et al., 2023), y ambos instrumentos se utilizan frecuentemente de forma conjunta.

Consideraciones metodológicas y culturales

Muchos instrumentos disponibles carecen de una definición conceptual clara del estigma o de un marco teórico explícito, y la mayoría de los estudios de validación se han realizado en países occidentales de ingresos altos, lo que limita su generalizabilidad (Nicholas et al., 2023). Las validaciones transculturales de la SOSS muestran que algunos ítems no funcionan de forma consistente entre contextos: en Hong Kong se identificó un modelo de cuatro factores que incorpora la deshonra y el egoísmo, reflejando normas culturales sobre la moralidad (Fong et al., 2022), mientras que en China ciertos ítems mostraron un rendimiento deficiente debido a valores

vinculados al deber filial (Han et al., 2017). Algo similar ocurre con la LOSS: aunque la Teoría de Respuesta al Ítem (TRI) es el marco más adecuado para su validación, varias adaptaciones han recurrido a la teoría clásica de los tests, limitando su robustez psicométrica (Collado et al., 2023; Gupta et al., 2023). En conjunto, estas consideraciones subrayan la necesidad de adaptaciones culturalmente sensibles, evaluaciones psicométricas rigurosas e implicación de personas con experiencia vivida para garantizar la validez de los instrumentos en poblaciones diversas.

6.1.4 Intervenciones para reducir el estigma hacia el suicidio

El creciente reconocimiento de las consecuencias del estigma ha impulsado el desarrollo de intervenciones específicas dentro de la prevención del suicidio. Los siguientes apartados ofrecen una visión integrada de las principales estrategias antistigma, la evidencia disponible sobre intervenciones específicas para el suicidio y el papel emergente de las tecnologías digitales en este ámbito.

Panorama de las estrategias antistigma

La investigación sobre reducción del estigma ha identificado tradicionalmente tres tipos de intervenciones: educación, contacto social y protesta (Corrigan et al., 2005, 2012; Thornicroft et al., 2016). Las estrategias de protesta han mostrado resultados limitados, mientras que los enfoques educativos y basados en el contacto son los más implementados y con mayor respaldo empírico.

Las intervenciones educativas mejoran el conocimiento y la alfabetización en salud mental mediante información estructurada, formación profesional o comunicación a través de los medios. Aunque producen mejoras a corto plazo en el conocimiento, sus efectos sobre las actitudes y el comportamiento son más débiles y menos estables (Mehta et al., 2015), y resultan más eficaces cuando incluyen

elementos interactivos o de experiencia vivida (Gronholm et al., 2017; Clay et al., 2020).

Las intervenciones basadas en el contacto tienden a generar un mayor cambio actitudinal, facilitando la interacción (directa o indirecta) con personas con experiencia vivida en salud mental. Tanto los formatos presenciales como los indirectos (vídeo, testimonios en línea) han mostrado mejoras comparables en actitudes y conducta intencional (Clement et al., 2012), siendo la autenticidad y resonancia emocional del intercambio el factor más influyente (Makhmud et al., 2022; Walsh & Foster, 2020).

Junto a estas estrategias, se han explorado otros mecanismos psicológicos como la reestructuración cognitiva, el trabajo narrativo y la toma de decisiones guiada (Yanos et al., 2015), que buscan no solo corregir la desinformación sino transformar la forma en que las personas se relacionan con sus propias creencias estigmatizadoras. En este sentido, las intervenciones que cultivan la flexibilidad psicológica —entendida como la capacidad de actuar según los propios valores mientras se permanece abierto a pensamientos difíciles— han mostrado reducciones del estigma más amplias y duraderas que los enfoques educativos o de contacto tradicionales (Masuda et al., 2007; Kenny & Bizumic, 2016; Krafft et al., 2018), a través de procesos como la defusión cognitiva, la aceptación y la clarificación de valores (Lillis & Hayes, 2007; Masuda et al., 2017).

Aunque las intervenciones disponibles han demostrado mejoras consistentes a corto plazo en conocimientos y actitudes, su impacto en el comportamiento y en la reducción duradera de la discriminación sigue siendo limitado (Mehta et al., 2015; Thornicroft et al., 2016). Las intervenciones que integran múltiples componentes —abordando conocimiento, actitudes y conducta a nivel individual y comunitario— tienden a obtener resultados más consistentes y sostenidos (Rao et al., 2019; Majeed et al., 2024). En cualquier caso, las intervenciones a nivel individual difícilmente eliminarán el estigma por sí solas: el cambio duradero requiere su integración con iniciativas estructurales y políticas más amplias que combatan la discriminación

institucional y promuevan la inclusión social (Nyblade et al., 2019; Thornicroft et al., 2016, 2022).

Evidencia de las intervenciones dirigidas al estigma asociado al suicidio

Aunque la investigación sobre reducción del estigma en salud mental es extensa, las intervenciones específicamente dirigidas al estigma del suicidio siguen siendo limitadas. Las existentes se han implementado en poblaciones diversas — población general, estudiantes, trabajadores rurales y supervivientes de intentos de suicidio— combinando psicoeducación y contacto, con efectos consistentes aunque modestos en la mejora de la alfabetización en suicidio y la reducción de actitudes estigmatizadoras. Entre los programas representativos se encuentran SCARF (Perceval et al., 2019), Mental Health First Aid (Bond et al., 2021), HEYLiFE (Grosselli et al., 2024) y 8 Lives (Dreier et al., 2023), entre otros. Estos resultados son comparables a los de los programas antistigma en salud mental general, lo que refleja la profunda resistencia al cambio de las creencias sobre el suicidio (Morgan et al., 2018; Thornicroft et al., 2016).

Los resultados están frecuentemente condicionados por la exposición previa al suicidio de los participantes, que puede modular tanto la empatía como los mecanismos de distanciamiento defensivo (Rogers et al., 2018). Estas intervenciones también parecen favorecer la intención de buscar ayuda, ya sea directamente — aumentando la confianza para asistir a otros (Bond et al., 2021)— o indirectamente, a través de una mayor apertura y menor vergüenza entre quienes tienen experiencia vivida (Sheehan et al., 2023).

Un riesgo relevante es que la reducción del estigma no conlleve automáticamente efectos protectores. Oexle et al. (2022) señalan que el intento por reducir el estigma puede coincidir, en algunos contextos, con una mayor normalización del suicidio —entendida como la percepción del suicidio como una respuesta comprensible o aceptable al sufrimiento—, especialmente cuando los mensajes empáticos no se enmarcan claramente en una perspectiva preventiva y orientada a la recuperación. Este fenómeno se ha observado en intervenciones como

SCARF y The Ripple Effect (Perceval et al., 2020; Kennedy et al., 2020), subrayando la necesidad ética de diseñar esfuerzos antistigma que transmitan compasión sin debilitar las normas sociales que desalientan la conducta suicida.

La evidencia disponible presenta importantes limitaciones metodológicas: muestras pequeñas y de conveniencia, escasez de diseños aleatorizados, seguimientos a corto plazo y evaluaciones basadas principalmente en medidas de autoinforme, lo que dificulta determinar si los cambios actitudinales se traducen en impacto conductual sostenido. Además, pocos estudios evalúan sistemáticamente posibles efectos adversos o iatrogénicos (Thornicroft et al., 2016; Corrigan & Rao, 2012). En conjunto, los resultados son prometedores pero heterogéneos, y el éxito de estas intervenciones depende de su adaptación cultural y poblacional, así como de la integración de componentes educativos, de contacto y orientados a la recuperación.

Tecnologías digitales en las intervenciones antistigma

El uso de tecnologías digitales para ampliar el alcance y la personalización de las intervenciones antistigma ha cobrado un creciente interés en los últimos años. Las aplicaciones de salud móvil (mHealth) y los programas web ofrecen opciones flexibles, de bajo coste y anónimas que superan barreras geográficas y sociales, resultando especialmente relevantes en el contexto del suicidio, donde el acceso digital puede llegar a personas que evitarían los entornos presenciales por temor al juicio o a la pérdida de confidencialidad (Rassy et al., 2021).

La evidencia empírica indica que las intervenciones antistigma en línea pueden ser tan eficaces como las presenciales: un metaanálisis de Goh et al. (2021) encontró que las intervenciones web lograban reducciones pequeñas-moderadas en el estigma público, con mayor accesibilidad y escalabilidad. Programas digitales como The Ripple Effect (Kennedy et al., 2020) y 8 Lives (Dreier et al., 2023) han mostrado que combinar educación con testimonios de experiencia vivida puede mejorar la comprensión y reducir las actitudes prejuiciosas. Esta potencialidad es especialmente relevante en PIBM, donde la expansión de las tecnologías móviles ofrece una vía

asequible para combatir el estigma a través de la educación, el apoyo entre iguales y la sensibilización pública (Naslund & Deng, 2021).

Más allá del formato de entrega, los avances recientes han incorporado herramientas de captura de experiencias en tiempo real. La Evaluación Momentánea Ecológica (*Ecological Momentary Assessment*, EMA) y la Intervención Momentánea Ecológica (*Ecological Momentary Intervention*, EMI) permiten monitorizar pensamientos, emociones y conductas en la vida cotidiana, ofreciendo una comprensión detallada de cómo fluctúan el estigma y la ideación suicida (Santangelo et al., 2017; Shiffman et al., 2008; Jiménez-Muñoz et al., 2022).

Los formatos digitales también han evolucionado hacia modalidades más interactivas e inmersivas. Los vídeos digitales, las animaciones y la narración digital han mostrado efectos positivos sobre la alfabetización en salud mental y la reducción del estigma en jóvenes (Ito-Jaeger et al., 2022). Los juegos serios y las simulaciones de realidad virtual (RV) emplean entornos interactivos para fomentar la toma de perspectiva y el aprendizaje emocional: un metaanálisis de Rodríguez-Rivas et al. (2022) encontró que las intervenciones basadas en tecnologías innovadoras — incluyendo videojuegos, RV y contacto electrónico— lograban un efecto medio consistente en la reducción del estigma público hacia la enfermedad mental. Ejemplos como el juego serio *Stigma-Stop* (Cangas et al., 2017) o *esTOCma* (García-Soriano et al., 2024) ilustran el potencial del aprendizaje gamificado para reducir el prejuicio.

En conjunto, las tecnologías digitales representan una vía prometedora aunque aún emergente para la reducción del estigma. Al integrar psicoeducación, contacto y evaluación en tiempo real en formatos accesibles e interactivos, pueden ampliar el alcance y mejorar la personalización de las intervenciones. No obstante, deben complementar y no sustituir las iniciativas comunitarias y estructurales orientadas a la inclusión y la reducción de la discriminación, y la investigación futura deberá examinar su eficacia a largo plazo y su adaptabilidad contextual.

6.2 Objetivos

El estigma hacia el suicidio constituye una barrera significativa tanto para la búsqueda de ayuda como para la sensibilización de la población general. Aunque la alfabetización en suicidio se ha identificado consistentemente como un predictor del estigma, existen importantes lagunas en su evaluación e intervención, especialmente en poblaciones hispanohablantes: escasez de instrumentos validados culturalmente, falta de datos sobre los niveles y predictores de estigma y alfabetización en este contexto, y ausencia de programas digitales basados en la evidencia diseñados específicamente para estas poblaciones.

El objetivo principal de esta tesis es examinar la alfabetización en suicidio y el estigma en poblaciones hispanohablantes, y desarrollar y validar una intervención basada en una aplicación móvil dirigida a abordar ambos aspectos y mejorar las intenciones de búsqueda de ayuda, incluyendo la evaluación de su eficacia y aceptabilidad. Para ello, se establecieron los siguientes objetivos específicos:

1. Adaptar y validar al español instrumentos de evaluación del estigma hacia el suicidio, la alfabetización en suicidio y la ideación suicida, y examinar sus propiedades psicométricas (Estudio 1).
2. Identificar y analizar las creencias y actitudes hacia el suicidio en individuos, para profundizar en la comprensión del estigma y el desconocimiento en torno a este fenómeno (Estudio 2).
3. Identificar los factores de riesgo y predictores del estigma hacia el suicidio y la alfabetización en suicidio (Estudio 2).
4. Examinar las variables sociodemográficas y clínicas asociadas al estigma hacia el suicidio y la alfabetización en suicidio (Estudio 2).
5. Diseñar y desarrollar una intervención basada en una aplicación móvil dirigida a mejorar la alfabetización en suicidio, reducir el estigma hacia el suicidio y fomentar la búsqueda de ayuda (Estudios 3 y 4).

6. Explorar la viabilidad y la efectividad preliminar de la aplicación móvil para aumentar la alfabetización en suicidio, reducir el estigma hacia el suicidio y promover la búsqueda de ayuda (Estudio 3).
7. Evaluar la aceptabilidad y usabilidad de la aplicación móvil, y realizar un análisis cualitativo de las experiencias y opiniones de los usuarios sobre su uso (Estudio 3).
8. Diseñar un protocolo de ensayo controlado aleatorizado (ECA) para evaluar los efectos de la aplicación móvil sobre la alfabetización en suicidio, el estigma hacia el suicidio y los resultados en búsqueda de ayuda (Estudio 4).
9. Presentar los resultados iniciales del ECA en curso, incluyendo los patrones preliminares de resultados observados entre los participantes que completaron la aplicación móvil (Estudio 5).

6.3 Métodos y resultados

6.3.1 Estudio 1: Validación de tres escalas para mejorar la prevención del suicidio en la población hispanohablante: ideas suicidas, estigma y alfabetización

La detección temprana de la ideación suicida, la evaluación del estigma y la medición de la alfabetización en suicidio son elementos fundamentales para el diseño de intervenciones preventivas eficaces. Sin embargo, aunque existían validaciones previas de estas escalas en español, estas se habían realizado en poblaciones específicas y acotadas (como estudiantes de medicina en Puerto Rico o participantes con bajo nivel educativo en Perú) y no siempre se habían aplicado los métodos estadísticos más adecuados para cada tipo de escala, como la Teoría de Respuesta al Ítem (TRI) para la LOSS-SF. Por ello, y con el objetivo de cubrir esta laguna metodológica, el presente estudio tuvo como objetivo adaptar culturalmente y examinar las propiedades psicométricas de tres escalas breves: la *Suicidal Ideation Attributes Scale* (SIDAS; Van Spijker et al., 2014), la *Stigma of Suicide Scale - Short Form*

(SOSS-SF; Batterham et al., 2013) y la *Literacy of Suicide Scale - Short Form* (LOSS-SF; Calear et al., 2022).

Para ello, se reclutó una muestra de 678 participantes (edad media = 28,1 años, DT = 10,97; 78,8% mujeres) procedentes de España (60,9%) y Latinoamérica (39,1%), principalmente de México, mediante un muestreo de conveniencia promovido por varias universidades y redes sociales. Los participantes completaron una encuesta online de aproximadamente 25 minutos. El 22,4% de la muestra ($n = 150$) fueron identificados como ideadores, es decir, presentaban puntuaciones superiores a cero en el SIDAS durante el último mes. Las escalas fueron traducidas mediante un procedimiento de retrotraducción independiente por hablantes nativos, con revisión posterior por expertos de ambas regiones para garantizar la equivalencia cultural y semántica. La validación del SIDAS y la SOSS-SF se llevó a cabo mediante Análisis Factorial Confirmatorio (AFC), empleando el método de Máxima Verosimilitud Robusto (MLR) dado el incumplimiento de la normalidad. La validación de la LOSS-SF se realizó mediante la TRI, dado el formato binario de sus ítems. En todos los casos se evaluó la invarianza de medición entre géneros.

En cuanto a los resultados, el AFC del SIDAS —realizado exclusivamente sobre la submuestra de ideadores— confirmó una estructura unifactorial con índices de ajuste adecuados ($\chi^2(5) = 9.663$; CFI = .98; RMSEA = .08; SRMR = .04) y una consistencia interna satisfactoria ($\omega = 0.73$). Cuatro de los cinco ítems presentaron cargas factoriales elevadas, mientras que el ítem 2 (controlabilidad) mostró una carga comparativamente más débil (0.26), resultado consistente con validaciones previas en Canadá y Reino Unido, y que podría deberse tanto a su formato invertido como a la posible ambigüedad del constructo para los participantes. La escala demostró invarianza escalar entre géneros, lo que permite comparar puntuaciones entre hombres y mujeres.

Respecto a la SOSS-SF, el AFC confirmó la estructura trifactorial original propuesta por Batterham et al. (2013), con índices de ajuste adecuados ($\chi^2(101) = 319.353$; CFI = .93; RMSEA = .06; SRMR = .06). Las subescalas de Estigma ($\omega = 0.86$) y

Depresión/Aislamiento ($\omega = 0.77$) mostraron buena fiabilidad, mientras que la subescala de Glorificación/Normalización presentó una consistencia interna más limitada ($\omega = 0.67$), en línea con lo observado en validaciones previas en Alemania, Bangladesh y Jordania. El ítem "dedicado" de esta subescala mostró una carga factorial comparativamente más débil (0.35), lo que podría estar relacionado con diferencias culturales en la concepción de la muerte, especialmente en el contexto mexicano, donde la muerte posee un valor simbólico particular. La escala demostró invarianza entre géneros a nivel escalar.

En lo que respecta a la LOSS-SF, el AFC previo a los modelos TRI reveló que los ítems 4 y 6 no presentaban cargas factoriales estadísticamente significativas, por lo que fueron eliminados. El ítem 4 hacía referencia a la relación entre el alcoholismo y el suicidio —una asociación condicionada por factores como el tipo de consumo— y el ítem 6 aludía a la rapidez con la que una persona puede cambiar de opinión sobre intentar suicidarse, noción que puede entrar en conflicto con concepciones más arraigadas sobre la conducta suicida. Tras su exclusión, la versión española quedó compuesta por 10 ítems con una estructura unifactorial y ajuste adecuado ($\chi^2(35) = 44.258$; CFI = .929; RMSEA = .065; SRMR = .067). Los modelos TRI indicaron que la mayoría de los ítems presentaban baja dificultad y adecuada discriminación. En consecuencia, los niveles más altos de fiabilidad se encontraron en participantes con bajos niveles de conocimiento sobre el suicidio, por lo que la escala no permitiría discriminar adecuadamente entre niveles elevados de conocimiento. No se detectó funcionamiento diferencial de los ítems por género.

En conclusión, las versiones españolas del SIDAS, la SOSS-SF y la LOSS-SF de 10 ítems demostraron ser herramientas fiables y válidas para evaluar la ideación suicida, el estigma y la alfabetización en suicidio en población hispanohablante. Su brevedad y formato de administración online las hacen especialmente adecuadas para estudios epidemiológicos a gran escala y para su integración en intervenciones digitales. Estos instrumentos validados constituyen una base metodológica sólida

para los estudios posteriores de esta tesis, permitiendo la evaluación estandarizada y culturalmente sensible de los constructos clave en prevención del suicidio.

6.3.2 Estudio 2: Niveles y predictores del estigma hacia el suicidio y la alfabetización en población hispanohablante

El suicidio constituye un problema de salud pública de primer orden a nivel mundial (OMS, 2021), y uno de los principales retos a los que se enfrenta su investigación y prevención es la destigmatización (Silverman, 2016). El estigma hacia el suicidio actúa como una barrera significativa para la búsqueda de ayuda y dificulta los esfuerzos preventivos (Calear et al., 2014; Batterham et al., 2022), mientras que una mayor alfabetización en suicidio puede no solo mitigar sus efectos, sino también incrementar las conductas de búsqueda de ayuda (Calear et al., 2014; Mok et al., 2021). Sin embargo, los estudios que examinan los niveles y predictores de ambas variables en población hispanohablante seguían siendo escasos (Hernández-Torres et al., 2021). El presente estudio tuvo como objetivo analizar los niveles de estigma hacia el suicidio y de alfabetización en suicidio en una muestra de individuos hispanohablantes de España y Latinoamérica, comparar ambas regiones e identificar las variables sociodemográficas y clínicas que los predicen.

Un total de 678 adultos hispanohablantes completaron una encuesta en línea entre diciembre de 2021 y mayo de 2022, reclutados mediante muestreo no probabilístico a través de varias universidades españolas y mexicanas, así como redes sociales. La muestra presentó una edad media de 28,10 años (DT = 10,97), con un 78,9% de mujeres, y estaba compuesta por participantes de España (60,9%) y Latinoamérica (39,1%), principalmente de México.

Los instrumentos utilizados fueron el SOSS-SF (Batterham et al., 2013) para evaluar el estigma público hacia el suicidio y el LOSS-SF (Calear et al., 2022) para medir la alfabetización en suicidio, junto con medidas de sintomatología depresiva (Cuestionario de Salud del Paciente-9, PHQ-9; Spitzer et al., 1999, Díez-Quevedo et al., 2001), ansiosa (Escala de Trastorno de Ansiedad Generalizada-7, GAD-7; Spitzer et al.,

2006; García-Campayo et al. 2010) e ideación suicida (SIDAS; van Spijker et al. 2014). Además, se recogieron variables sociodemográficas mediante ítems ad hoc, incluyendo género, edad, región, nivel educativo y ocupación. El grado de adhesión a creencias religiosas o espirituales se evaluó mediante una escala Likert de cinco puntos. Asimismo, se preguntó a los participantes si conocían recursos de ayuda en caso de ideación suicida y si habían tenido experiencias relacionadas con el suicidio en su entorno, distinguiendo entre haber conocido a alguien que lo había intentado o que había fallecido por suicidio.

Los análisis incluyeron estadísticos descriptivos, pruebas de diferencias entre regiones (chi-cuadrado y t de Student), correlaciones de Pearson y tres conjuntos de modelos de regresión lineal jerárquica para explicar las tres dimensiones del estigma (estigma, glorificación y depresión/aislamiento), así como un modelo de regresión de Poisson jerárquica para explicar la alfabetización en suicidio, método apropiado dado que la puntuación total de la LOSS-SF es una variable de recuento.

En cuanto a los resultados, se observó una predominancia de la concepción del suicidio como un acto propio de personas con características vinculadas al aislamiento y la depresión: los adjetivos con mayor porcentaje de acuerdo fueron "perdida" (68,1%), "desconectada" (59,7%) y "aislada" (57,8%). El grupo latinoamericano mostró actitudes significativamente más estigmatizadoras que el español, con puntuaciones más elevadas en las subescalas de estigma y glorificación/normalización. Cabe destacar que los participantes latinoamericanos asociaron con mayor frecuencia a las personas que mueren por suicidio con adjetivos de connotación positiva como "noble" y "fuerte", lo que podría reflejar la influencia de valores culturales y religiosos particulares, especialmente en el contexto mexicano, donde la muerte tiene un significado simbólico arraigado. En cuanto a la alfabetización, la muestra mostró un nivel moderado de conocimiento sobre el suicidio, con puntuaciones especialmente elevadas en la subescala de causas y naturaleza del suicidio, y más bajas en el resto. Los participantes españoles presentaron niveles significativamente más altos de alfabetización total y en las

subescalas de causas y síntomas, mientras que los latinoamericanos obtuvieron puntuaciones más altas en factores de riesgo.

Los análisis de correlación mostraron que una mayor alfabetización en suicidio se asoció de forma consistente con menores niveles de estigma, especialmente en las dimensiones de causas y tratamiento. La edad correlacionó negativamente con la alfabetización total y todas sus subescalas. Las creencias religiosas y espirituales se asociaron positivamente con la subescala de estigma y negativamente con la alfabetización total y la mayoría de sus subescalas, a excepción de la de factores de riesgo.

Los modelos de regresión lineal jerárquica revelaron patrones diferenciados según la subescala del SOSS analizada.

Para la subescala de estigma, el modelo con las dimensiones de alfabetización fue significativo (Model 1: $F(4,533)=9.03, p<.001$), explicando el 5.87% de la varianza. Puntuaciones más bajas en las dimensiones de causas y tratamiento de la escala LOSS se asociaron con mayor estigma hacia el suicidio. La incorporación de variables sociodemográficas produjo un modelo significativo (Model 2: $F(11,526) = 6.46, p < .001$) con un incremento significativo en la varianza explicada ($\Delta R^2 = .056, F(7) = 4.75, p < .001$). Las mujeres mostraron menor estigma que los hombres, mientras que las creencias religiosas más fuertes y el desconocimiento sobre cómo buscar ayuda se asociaron con mayor estigma. La adición de variables clínicas (Model 3: $F(14,523)=5.44, p<.001$) no incrementó significativamente la varianza explicada ($\Delta R^2 = .008, F(3)=1.61, p < 0.180$), siendo la depresión el único predictor nuevo significativo, con mayor sintomatología depresiva asociada a menor estigma.

Para la subescala de glorificación, el modelo con alfabetización no fue significativo (Model 1: $F(4,533) = 1.43, p = 0.223$), explicando el 1.01% de la varianza, con la dimensión de tratamiento de la LOSS como único predictor significativo. La incorporación de variables sociodemográficas produjo un modelo marginalmente significativo (Model 2: $F(11,526)=1.66, p = 0.078$) con un incremento marginal en la

varianza explicada ($\Delta R^2 = 0.030$, $F(7)=5.47$, $p = 0.087$), siendo la región el único predictor sociodemográfico significativo, con los participantes latinoamericanos reportando mayor glorificación que los españoles. La adición de variables clínicas no modificó este patrón (Model 3: $F(14,523) = 1.57$, $p = 0.085$; $\Delta R^2 = 0.006$, $F(3) = 1.56$, $p = 0.311$), sin que ninguna variable clínica alcanzara significación estadística.

Para la subescala de depresión, ninguno de los modelos fue significativo. El modelo con alfabetización no alcanzó significación (Model 1: $F(4,533) = 1.59$, $p = 0.176$), ni tampoco el modelo con variables sociodemográficas (Model 2: $F(11,526) = 0.83$, $p = 0.609$; $\Delta R^2 = 0.005$, $F(7) = 0.041$, $p = 0.898$). El Modelo 3 tampoco fue significativo (Model 3: $F(14,523) = 1.21$, $p = .261$), aunque se observó un incremento marginalmente significativo en la varianza explicada al incluir las variables clínicas ($\Delta R^2 = .014$, $F(3) = 5.17$, $p = 0.052$), siendo la sintomatología ansiosa el único predictor significativo, con mayor puntuación en el GAD-7 asociada a mayor puntuación en esta subescala.

Por último, los modelos de Poisson jerárquicos para explicar la alfabetización (puntuación total) mostraron que el modelo con variables sociodemográficas fue significativo (Model = 4.1: $\chi^2(9)=29.26$, $p=.001$), explicando el 8.44% de la varianza. Las creencias religiosas/espirituales fueron el único predictor significativo, con creencias más fuertes asociadas a menor literacidad suicida. La incorporación de variables clínicas no produjo un incremento significativo en la varianza explicada (Model 2: $\chi^2(12)=30.54$, $p=.002$; $\Delta R^2=.004$, $\Delta\chi^2=1.28$, $p=.733$), sin que ninguna variable clínica alcanzara significación estadística.

En conjunto, estos resultados ponen de manifiesto la necesidad de diseñar intervenciones de prevención del suicidio culturalmente sensibles que aborden tanto el estigma como la alfabetización de forma diferenciada según el contexto regional, prestando especial atención a variables como el género, las creencias religiosas y el conocimiento de los recursos disponibles.

6.3.3 Estudio 3: Viabilidad y experiencia cualitativa de la aplicación móvil “Rompiendo el Silencio” para reducir el estigma hacia el suicidio, mejorar los conocimientos y potenciar la intención de buscar ayuda.

Las intervenciones y programas recientes han mostrado mejoras moderadas en estigma y alfabetización hacia el suicidio. Sin embargo, presentan limitaciones metodológicas y se basan principalmente en componentes educativos y de contacto, sin incorporar mecanismos como la flexibilidad cognitiva o la alineación con valores personales, que han mostrado potencial en contextos afines (Kenny & Bizumic, 2016; Lannin et al., 2020). Además, las intervenciones digitales específicamente dirigidas al estigma hacia el suicidio en población hispanohablante siguen siendo escasas.

En este contexto, el presente estudio evaluó Rompiendo el Silencio (RomSi; Breaking the Silence, BreakSi en inglés), una aplicación móvil autoguiada diseñada para reducir el estigma hacia el suicidio, mejorar la alfabetización y promover la búsqueda de ayuda. El estudio persiguió dos objetivos complementarios: un componente cuantitativo (Estudio 1) que examinó indicadores clave de viabilidad — incluyendo la tasa de participación, la adherencia, los patrones de uso y la aceptabilidad— así como cambios preliminares en estigma, alfabetización e intenciones de búsqueda de ayuda; y un componente cualitativo (Estudio 2) orientado a explorar en profundidad la experiencia de los participantes, incluyendo el impacto percibido, las respuestas emocionales y las sugerencias de mejora. Ambos componentes se integraron para ofrecer una evaluación de viabilidad mediante métodos mixtos e informar el refinamiento futuro de la intervención.

Se adoptó un diseño mixto de grupo único con evaluaciones pre y post intervención. Un total de 35 participantes hispanohablantes completaron el estudio. Se excluyeron personas con alto riesgo de suicidio (puntuación ≥ 21 en el SIDAS o entre 7 y 10 en el ítem 3) o elevado sesgo de deseabilidad social (puntuación ≥ 14 en la escala de Marlowe-Crowne, Crowne & Marlowe, 1960; Gutiérrez et al., 2016).

RomSi es una aplicación móvil autoguiada estructurada en cuatro componentes: educación, contacto indirecto, flexibilidad cognitiva y valores. Cuenta con recursos audiovisuales, ejercicios de reflexión y cuestionarios con retroalimentación inmediata. Los participantes disponían de 10 días para completar el programa, ampliables otros 10 en caso de adherencia consistente.

Los resultados evaluados incluyeron indicadores de viabilidad y aceptabilidad, evaluados mediante un cuestionario basado en la Teoría Unificada de Aceptación y Uso de la Tecnología (UTAUT; Venkatesh et al., 2003) y barreras de uso (preguntas *ad hoc*). Como medidas de eficacia preliminar se emplearon el estigma público hacia el suicidio (SOSS-SF; Pierantonelli et al., 2024), la alfabetización en suicidio (LOSS-SF de 10 ítems; Pierantonelli et al., 2024) y las intenciones de búsqueda de ayuda (GHSQ; Wilson et al., 2005). Como medidas secundarias se recogieron el estigma personal (PSSQ; Rimkeviciene et al., 2021), la ideación suicida (SIDAS; van Spijker et al., 2014; Pierantonelli et al., 2024) y la sintomatología depresiva y ansiosa (PHQ-9 y GAD-7).

Los análisis cuantitativos fueron principalmente descriptivos y exploratorios, empleando pruebas pre-post (t de Student o Wilcoxon según normalidad) con cálculo de tamaños del efecto. Los datos cualitativos de las entrevistas semiestructuradas (n = 8) se analizaron mediante Investigación Cualitativa Consensual (CQR; Hill et al., 2005), y las respuestas abiertas de forma descriptiva. Ambos tipos de datos se integraron en la fase interpretativa.

El Estudio 1 se llevó a cabo en una muestra de 35 participantes (edad media = 21,71 años, DT = 13,70; 85,7% mujeres), principalmente estudiantes españoles con nivel educativo secundario o de formación profesional. El 34,2% refirió haber conocido a alguien que había intentado o fallecido por suicidio. Las puntuaciones basales indicaron sintomatología depresiva y ansiosa leve y niveles bajos de ideación suicida.

De los 199 individuos que iniciaron el cribado, el 77,4% (n = 154) completó la evaluación basal y recibió instrucciones para descargar la aplicación. De estos, 47 (30,5%) no la descargaron y otros 47 (30,5%) la descargaron pero no accedieron al

contenido, resultando en una tasa de inicio de la intervención del 39,0% (60/154). Entre quienes iniciaron el programa ($n = 60$), 21 (35,0%) no lo completaron en el tiempo establecido y 4 (6,6%) no completaron la evaluación post-intervención, resultando en una muestra final de 35 participantes. Los participantes completaron la intervención en una media de 6,26 días ($DT = 4,06$), con el 80% finalizando dentro del periodo recomendado de 10 días. La adherencia a las evaluaciones diarias fue variable, con una mediana de respuesta del 25%, aunque 6 participantes alcanzaron el 100% de cumplimiento.

En términos de aceptabilidad, los participantes valoraron positivamente la claridad, facilidad de uso y adecuación de los recursos de la aplicación, así como su disposición a recomendarla. El olvido y la falta de tiempo fueron las principales barreras referidas.

Respecto a la eficacia preliminar, se observaron reducciones significativas en la subescala de depresión/aislamiento ($t(34) = 4,27$; $p < .001$; $d = .72$) y en la de glorificación/normalización ($t(34) = 2,08$; $p = .045$; $d = .35$) de la escala de estigma hacia el suicidio (SOSS-SF), con tamaños del efecto moderado y pequeño respectivamente. La subescala de estigma mostró una reducción marginalmente no significativa ($t(34) = 1,88$; $p = .068$; $d = .32$). La alfabetización mejoró significativamente ($t(34) = -2,85$; $p = .007$; $d = .48$), con un incremento en la proporción de respuestas correctas del 65,7% al 75,1%, especialmente en los dominios de causas y factores de riesgo. Las intenciones de búsqueda de ayuda formal no mostraron cambios significativos ($t(32) = -0,69$; $p = .49$; $d = .12$). Como hallazgos secundarios, los síntomas depresivos se redujeron significativamente ($Z = -2,11$; $p = .035$; $r = .36$), mientras que la ansiedad mostró una tendencia no significativa a la baja. La ideación suicida se mantuvo estable a lo largo de la intervención.

Los datos cualitativos se recogieron a partir de tres fuentes: respuestas abiertas integradas en la aplicación, retroalimentación post-intervención y entrevistas semiestructuradas post-intervención ($n = 8$).

Las respuestas abiertas al finalizar la sección de valores ($n = 29$) se organizaron en cinco categorías: escucha activa y presencia, actitudes empáticas y no enjuiciadoras, ofrecimiento de apoyo y acompañamiento, comunicación abierta sobre el suicidio, y búsqueda de información y reconocimiento de señales de alerta. En la retroalimentación post-intervención, 17 de 35 participantes indicaron que no cambiarían nada. Entre quienes hicieron sugerencias, la más frecuente fue mejorar la navegación y la continuidad entre secciones.

El análisis CQR de las entrevistas identificó tres dominios con 15 categorías. El primero, *Experiencia global y evaluación*, recogió valoraciones generalmente positivas de la aplicación, destacando su utilidad percibida y la claridad del contenido. El segundo dominio, *Efectos percibidos*, incluyó la adquisición de estrategias de apoyo y comunicación, el aumento de la autoconfianza para buscar ayuda y cambios en las creencias y actitudes hacia el suicidio, como una menor tendencia a culpabilizar y una visión más compasiva. Se identificaron también respuestas emocionales positivas como alivio y esperanza, junto con una activación emocional leve y manejable en algunos participantes. El tercer dominio, *Usabilidad*, recogió percepciones de facilidad de uso y progreso flexible, así como dificultades de navegación relacionadas con la ausencia de indicadores de progreso entre secciones.

6.3.4 Estudio 4: Rompiendo el Silencio: Protocolo del ensayo controlado aleatorizado de una aplicación móvil para reducir el estigma hacia el suicidio, mejorar la alfabetización y promover la búsqueda de ayuda

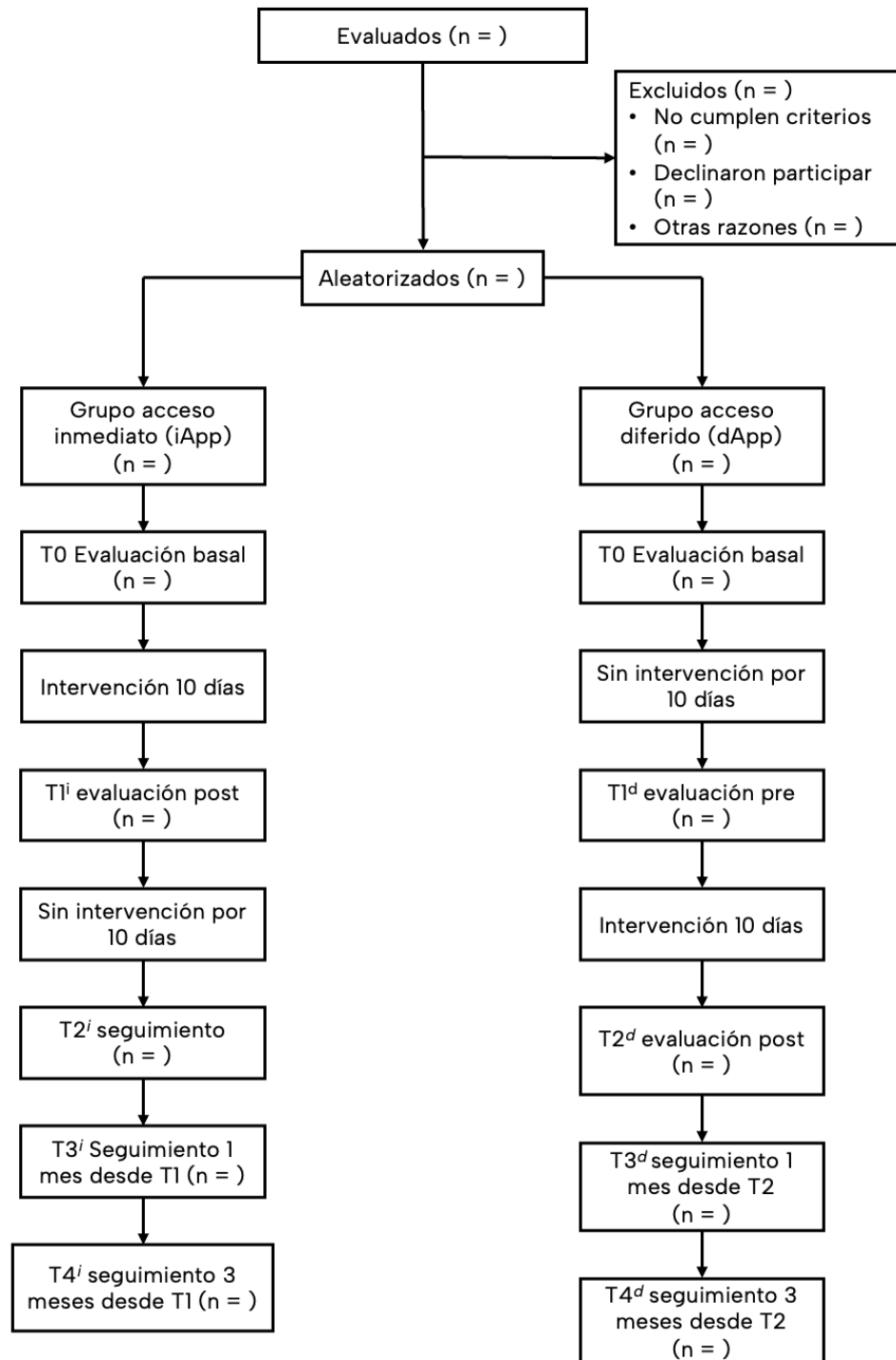
A pesar de los avances en prevención del suicidio, el estigma sigue siendo una barrera significativa para la búsqueda de ayuda y el impacto de las intervenciones preventivas (OMS, 2021a). Aunque los programas antistigma en salud mental muestran beneficios consistentes, los dirigidos específicamente al estigma hacia el suicidio siguen siendo escasos y presentan limitaciones metodológicas importantes,

como la ausencia de diseños aleatorizados, seguimientos breves y escasa integración de componentes activos más allá de la educación (Bond et al., 2021; Rogers et al., 2018; Dreier et al., 2023). El presente estudio describe el protocolo de un ECA diseñado para evaluar RomSi en población hispanohablante adulta.

El estudio sigue un diseño de dos brazos con asignación aleatoria (1:1) y cruce diferido: el grupo de acceso inmediato (iApp) comienza la intervención tras la evaluación basal, mientras que el grupo de acceso diferido (dApp) actúa como control durante los primeros 10 días antes de recibir la intervención. La aleatorización estará estratificada por niveles basales de estigma (SOSS-SF, subescala estigma; Pierantonelli., 2025). Se prevén cinco momentos de evaluación. Ambos grupos completarán una evaluación basal (T0). El grupo iApp iniciará la intervención de 10 días, con una evaluación post-intervención en T1ⁱ, seguida de un periodo de 10 días sin aplicación y una evaluación de seguimiento en T2ⁱ, y evaluaciones adicionales al mes (T3ⁱ) y a los tres meses (T4ⁱ) tras T1ⁱ. En paralelo, el grupo dApp completará un periodo de espera de 10 días antes de una segunda evaluación basal en T1^d, tras la cual iniciará la intervención de 10 días con evaluación post-intervención en T2^d y seguimientos al mes (T3^d) y a los tres meses (T4^d) tras T2^d (ver Figura 1). El estudio está registrado en ClinicalTrials.gov (NCT06759129) y fue aprobado por el Comité de Ética de la Universitat de València.

Figura 1.

Diagrama de Flujo de Participantes



RomSi integra cuatro componentes con base empírica. El componente de *educación* aborda el estigma hacia el suicidio y la alfabetización, fomentando una

comprensión más abierta y no enjuiciadora de las experiencias suicidas y proporcionando información accesible sobre factores de riesgo, señales de alerta y formas de respuesta adecuadas. El componente de *contacto indirecto* se integra a lo largo de toda la intervención mediante un personaje recurrente que ofrece reflexiones personales vinculadas a cada temática, y viñetas contextualizadas que ilustran situaciones cotidianas de personas con ideación o conducta suicida y sus allegados. El componente de *flexibilidad cognitiva* emplea metáforas, paradojas y escenarios interactivos para ayudar a los participantes a cuestionar los mitos más comunes sobre el suicidio y a desarrollar interpretaciones más flexibles y compasivas. Finalmente, el componente de *valores* invita a los participantes a reflexionar sobre principios personalmente significativos, especialmente la compasión, la empatía y la responsabilidad social, y a identificar acciones concretas y coherentes con dichos valores en el contexto de la prevención del suicidio. Todo el contenido se presenta mediante tarjetas interactivas breves con recursos audiovisuales, tareas de reflexión y cuestionarios con retroalimentación inmediata.

El tamaño muestral estimado es de 174 participantes (87 por grupo), calculado a priori para detectar un tamaño del efecto moderado ($f = 0.30$) con una potencia del 80% y un nivel alpha de 0.05, asumiendo una tasa de abandono del 30% (Faul et al., 2007). Los criterios de inclusión son: edad igual o superior a 18 años, dominio del español, acceso habitual a un smartphone y competencia digital básica. Se excluirán personas con alto riesgo de suicidio (puntuación ≥ 21 en el SIDAS o entre 7 y 10 en el ítem 3) o elevado sesgo de deseabilidad social (puntuación ≥ 14 en la escala de Marlowe-Crowne).

Las variables de resultado primarias son el estigma público hacia el suicidio (SOSS-SF), la alfabetización (LOSS-SF de 10 ítems) y las intenciones de búsqueda de ayuda (GHSQ). Como medidas secundarias se incluyen el estigma personal (PSSQ), la ideación suicida (SIDAS) y la sintomatología depresiva y ansiosa (PHQ-9 y GAD-7). La viabilidad y aceptabilidad se evaluarán mediante el cuestionario basado en la UTAUT y una submuestra de entrevistas cualitativas analizadas mediante CQR. Los efectos de

la intervención se analizarán mediante modelos lineales mixtos, siguiendo principios de intención de tratar y por protocolo.

Este ensayo contribuye a dos áreas emergentes en la investigación sobre prevención del suicidio: la atención creciente al estigma hacia el suicidio como fenómeno específico y complejo, y el uso de tecnologías digitales para distribuir intervenciones basadas en la evidencia de forma escalable (Batterham et al., 2022; Thornicroft et al., 2022). En la medida en que el silencio y los conceptos erróneos siguen limitando la búsqueda de ayuda, RomSi busca facilitar conversaciones responsables sobre el suicidio y fomentar entornos en los que las personas se sientan más capaces de pedir y ofrecer ayuda, en línea con el llamado de la Comisión Lancet para poner fin al estigma en salud mental (Thornicroft et al., 2022).

6.3.5 Estudio 5: Resultados preliminares del ensayo controlado aleatorizado sobre la aplicación móvil Rompiendo el Silencio

La estigmatización del suicidio constituye una barrera importante para la prevención, la búsqueda de ayuda y la respuesta de apoyo en el entorno social, por lo que desarrollar intervenciones escalables y culturalmente adaptadas resulta especialmente relevante (Ministerio de Sanidad, 2025; OMS, 2021a; Reynders et al., 2014). En este contexto, el estudio evalúa de forma preliminar RomSi (Rompiendo el Silencio). En este contexto, el presente estudio tuvo como objetivo ofrecer una primera aproximación empírica a BreakSi, describiendo los patrones iniciales de participación, examinando la usabilidad y las barreras percibidas, y explorando cambios pre-post en estigma, alfabetización en suicidio e intención de búsqueda de ayuda.

Para ello, se presentan resultados iniciales integrados en un ensayo controlado aleatorizado de dos brazos con diseño cruzado (ver Estudio 4 para más información). Los participantes fueron asignados a acceso inmediato a la app (iApp) o acceso diferido/lista de espera (dApp), y completaron evaluaciones en línea al inicio (T0) y al

final del periodo inicial (T1). El análisis se restringió a muestras de completadores definidas tras la aleatorización, por lo que los hallazgos deben interpretarse como preliminares y descriptivos, no como evidencia definitiva de eficacia causal.

Los análisis estadísticos se realizaron con IBM SPSS Statistics v.29 y, dado el pequeño tamaño muestral y la posible vulneración de supuestos paramétricos, se emplearon pruebas no paramétricas. Las variables continuas y ordinales se describieron mediante mediana (IQR) y las categóricas como n (%). Para comparar características basales entre grupos se usaron pruebas U de Mann–Whitney y pruebas exactas (Fisher o Freeman–Halton). Los cambios pre-post dentro de cada grupo se analizaron con Wilcoxon signed-rank, mientras que las diferencias entre grupos en los cambios ($\Delta = T1 - T0$) se examinaron con Mann–Whitney U. El tamaño del efecto se informó como r , interpretado como pequeño (0.10), mediano (0.30) o grande (0.50), con $\alpha = .05$ bilateral y sin ajuste por comparaciones múltiples debido al carácter exploratorio del estudio.

Respecto al flujo de participantes y alcance, entre octubre de 2025 y febrero de 2026, 100 de 106 personas evaluadas fueron aleatorizadas (94.3%) a iApp ($n = 51$) o dApp ($n = 49$). La muestra analítica de completadores fue de 23 participantes (iApp = 12; dApp = 11). En la línea base, los grupos fueron en general comparables, aunque iApp presentó mayor exposición al suicidio en el entorno que dApp (66.7% vs. 18.2%; $p = .026$), sin diferencias significativas respecto a las variables de resultado y clínicas.

En los resultados intragrupo, la señal más clara apareció en la alfabetización en suicidio (LOSS-SF) dentro del grupo iApp, donde se observó una mejoría significativa entre T0 y T1, con un aumento de la mediana de 7.50 (IQR = 5.00) a 8.00 (IQR = 2.00), $Z = -2.04$, $p = .042$, $r = 0.69$, lo que indica un tamaño del efecto grande. En cambio, en dApp la alfabetización mostró una reducción no significativa, de 9.00 (IQR = 1.00) a 7.00 (IQR = 2.00), $Z = -1.84$, $p = .066$, $r = -0.92$, aunque este resultado debe interpretarse con cautela porque se basó solo en 4 diferencias no nulas. Respecto a las subescalas de estigma no se observaron cambios significativos en iApp, aunque sí aparecieron señales potencialmente relevantes: en aislamiento/depresión hubo una

disminución de 4.00 (IQR = 1.06) a 3.12 (IQR = 1.63), cercana a la significación ($Z = -1.91$, $p = .056$, $r = -0.60$), y en glorificación/normalización también se observó una reducción no significativa, de 2.87 (IQR = 1.56) a 2.37 (IQR = 1.00), $Z = -1.07$, $p = .284$, $r = -0.32$. En contraste, en dApp sí apareció un aumento significativo en glorificación/normalización, de 2.00 (IQR = 1.25) a 3.00 (IQR = 1.25), $Z = -2.49$, $p = .013$, $r = 0.79$, mientras que el resto de variables no cambió significativamente. Las intenciones de búsqueda de ayuda formal (GHSQ) permanecieron estables en ambos grupos.

En las comparaciones entre grupos de los cambios pre-post, solo la alfabetización en suicidio (LOSS-SF) mostró una diferencia estadísticamente significativa a favor de iApp. El cambio mediano fue de $\Delta = 1.00$ (IQR = 2.75) en iApp frente a $\Delta = 0.00$ (IQR = 2.00) en dApp, con $U = 19.50$, $Z = -2.99$, $p = .003$, $r = 0.63$, lo que indica un efecto grande. Para la subescala de glorificación/normalización no se alcanzó la significación estadística, pero sí apareció una tendencia relevante a favor de iApp, con $\Delta = -0.25$ (IQR = 2.13) frente a $\Delta = 0.25$ (IQR = 0.25) en dApp, $U = 36.50$, $Z = -1.84$, $p = .065$, $r = 0.39$, es decir, un tamaño del efecto moderado. No se encontraron diferencias significativas entre grupos en estigma ($U = 50$, $p = .323$, $r = 0.21$), aislamiento/depresión ($U = 49$, $p = .289$, $r = 0.22$) ni búsqueda de ayuda formal ($U = 62.50$, $p = .823$, $r = 0.05$).

En relación con la aceptabilidad y las barreras, las 12 personas del grupo iApp que completaron la app informaron una usabilidad elevada. El 100% estuvo de acuerdo o muy de acuerdo en que disponía de los recursos necesarios, que la aplicación era fácil de usar, que tenía conocimientos suficientes para utilizarla y que aprender a usarla fue sencillo. Además, 91.67% afirmó haber comprendido claramente el contenido y valoró positivamente la interacción con la app. La recomendación a otras personas en situación difícil también alcanzó 91.67%, y 83.33% consideró Internet un medio adecuado para administrar el programa. En cambio, la utilidad percibida en la vida diaria obtuvo el porcentaje más bajo (33.33%) y la sensación de apoyo durante la intervención online fue moderada (50.00%). Las

barreras más frecuentes no fueron técnicas, sino cotidianas, especialmente olvidarse de usar la aplicación y la falta de tiempo.

En conjunto, los resultados preliminares sugieren que RomSi podría mejorar la alfabetización en suicidio, con efectos prometedores sobre el estigma y menos claros sobre la búsqueda de ayuda formal. En gran medida, estos hallazgos son consistentes con los del estudio previo de viabilidad (estudio 3) y apoyan la factibilidad y el potencial de la intervención.

6.4 Conclusiones

6.4.1 Conclusiones generales

En la presente tesis doctoral, se han diseñado y llevado a cabo cinco estudios para cada uno de los cuales se han detallado su marco teórico, objetivos e hipótesis, metodología, resultados y discusiones específicas. Las conclusiones principales de la tesis doctoral son las siguientes:

1. Las versiones en español del SOSS-SF y del SIDAS, junto con una versión mejorada del LOSS-SF en español de 10 ítems, mostraron un buen rendimiento psicométrico, incluyendo indicios de fiabilidad, invarianza de medida entre géneros y respaldo a las estructuras factuales propuestas, lo que avala su uso para evaluar el estigma del suicidio, los conocimientos sobre el suicidio y la gravedad de las ideas suicidas en contextos de habla hispana, incluyendo España y América Latina.
2. En una muestra de habla hispana, se observó estigma hacia el suicidio y un nivel moderado de conocimientos sobre el suicidio. Los españoles informaron de un menor estigma y mayores conocimientos; en comparación, los participantes latinoamericanos informaron de un mayor estigma, menores conocimientos y una mayor glorificación y normalización del suicidio.
3. Un menor nivel de conocimientos sobre el suicidio parecía más común entre las personas de más edad y aquellas que manifestaban creencias religiosas o

espirituales más fuertes. Un mayor estigma hacia el suicidio tendía a ser más pronunciado entre las personas con menor nivel de conocimientos, los hombres, aquellos con creencias religiosas o espirituales más fuertes y aquellos que no sabían cómo buscar ayuda. La glorificación o normalización del suicidio era más pronunciada según la región (en América Latina) y también era mayor entre los participantes con menos conocimientos sobre el tratamiento y la prevención del suicidio. Por el contrario, la concepción del suicidio como depresión o aislamiento no se explicaba claramente por factores sociodemográficos o de alfabetización y parecía estar más estrechamente relacionada con los síntomas de ansiedad.

4. Se desarrolló una aplicación móvil (Braking the Silence; BreakSi - Rompiendo el Silencio; RomSi en español) que integra cuatro componentes con evidencia de eficacia en intervenciones de reducción del estigma: educación, contacto indirecto, flexibilidad cognitiva y valores. La tesis también especificó un protocolo de ensayo controlado aleatorizado con diseño cruzado para evaluar RomSi en la reducción del estigma hacia el suicidio, la mejora de la alfabetización sobre el suicidio y el apoyo a la búsqueda de ayuda, incluyendo una aleatorización estratificada basada en los niveles de estigma iniciales, con dos seguimientos y evaluaciones diarias para facilitar el control de la seguridad y captar cambios tempranos y sostenidos.
5. RomSi resultó viable y tuvo una buena acogida entre los participantes que utilizaron la aplicación. Estos también mostraron el patrón esperado de cambios tempranos, incluyendo una menor glorificación/normalización del suicidio y menos opiniones depresivas o relacionadas con el aislamiento sobre el suicidio, junto con una mayor alfabetización sobre el suicidio, mientras que los cambios en el estigma del suicidio y la búsqueda de ayuda formal fueron pequeños y menos consistentes.
6. Los comentarios de los usuarios de BreakSi sugirieron cambios significativos en las actitudes y la disposición a actuar, incluyendo una mayor disposición a escuchar sin juzgar, una mayor confianza en cómo responder a alguien en riesgo y una intención más proactiva de detectar señales de alerta y ofrecer

apoyo. Los participantes también destacaron la adquisición de estrategias de comunicación concretas y una mayor apertura a hablar del suicidio de forma directa y responsable, al tiempo que describían la aplicación como aceptable y útil, con sugerencias prácticas para mejorar la continuidad y la implicación.

7. Los primeros resultados de un ECA en curso sugieren que RomSi muestra efectos prometedores entre los participantes que se involucran en la intervención, observándose las mejoras preliminares más claras en los conocimientos sobre el suicidio y patrones potencialmente favorables en la normalización/glorificación del suicidio, mientras que los cambios en otros ámbitos del estigma y en la búsqueda de ayuda formal fueron menores y menos consistentes. Es importante destacar que estos patrones preliminares de resultados coincidieron en gran medida con los hallazgos de viabilidad, lo que refuerza la confianza en la consistencia de las señales tempranas a lo largo de las fases del estudio.

6.4.2 Fortalezas y limitaciones

Entre las principales fortalezas de esta tesis destaca la integración de diseños y métodos complementarios, que aportan evidencia convergente desde la validación de instrumentos, los análisis exploratorios y el desarrollo y evaluación inicial de RomSi. La tesis combina enfoques cuantitativos y cualitativos, lo que permite una comprensión más amplia tanto de los patrones observados como de la experiencia de los participantes. En este sentido, una contribución especialmente novedosa es el desarrollo de la primera intervención móvil en español dirigida específicamente a reducir el estigma hacia el suicidio. A ello se suma el uso de procedimientos metodológicos rigurosos, la incorporación de prácticas de transparencia y ciencia abierta, y el desarrollo de un ensayo aleatorizado que refuerza la solidez y la proyección aplicada del programa de investigación.

No obstante, esta tesis doctoral también presenta limitaciones que deben ser reconocidas. Los estudios presentados se basaron en muestras reclutadas online y autoseleccionadas, con predominio de mujeres jóvenes y con mayor nivel educativo,

lo que puede restringir la generalización de los resultados. Además, la evaluación de las variables principales se apoyó fundamentalmente en medidas de autoinforme, susceptibles a sesgos de respuesta, especialmente en un tema sensible como el suicidio. También deben considerarse las limitaciones inherentes a algunos de los diseños empleados, ya que los análisis transversales no permiten establecer relaciones causales, el estudio de viabilidad no permite atribuir con certeza los cambios observados a la intervención, y los resultados preliminares del ensayo aleatorizado proceden de participantes que completaron la intervención, por lo que deben interpretarse con cautela.

6.4.3. Potenciales implicaciones y futuras direcciones

Los resultados obtenidos en la presente tesis doctoral plantean significativas implicaciones teóricas y clínicas, estableciendo asimismo sustento teórico y metodológico para futuras investigaciones.

Implicaciones teóricas

En primer lugar, esta tesis respalda perspectivas contextuales del suicidio y el estigma, al subrayar que no basta con explicaciones exclusivamente clínicas o individuales para comprender cómo se percibe, se interpreta y se responde al suicidio. En este sentido, los resultados refuerzan la importancia de los factores sociales, culturales y ambientales, en consonancia con enfoques de salud pública que destacan el peso de los determinantes sociales y la necesidad de estrategias preventivas que vayan más allá del ámbito estrictamente clínico (Al-Halabí y Fonseca-Pedrero, 2024; Na et al., 2025; Gallagher et al., 2025; Pirkis et al., 2023).

En segundo lugar, la tesis contribuye a una comprensión más sensible al contexto del estigma hacia el suicidio y la alfabetización, al mostrar que ambos constructos pueden variar en función de factores culturales, demográficos y clínicos, por lo que no deberían asumirse como fácilmente generalizables entre poblaciones. En particular, los hallazgos llaman la atención sobre la posible relevancia de variables contextuales, como las creencias religiosas, y refuerzan la conveniencia de estudiar estos procesos en marcos culturales específicos (Han et al., 2018).

En tercer lugar, la incorporación de componentes de flexibilidad cognitiva y acción guiada por valores amplía los marcos conceptuales predominantes en la reducción del estigma, habitualmente centrados en la educación y el contacto, al introducir mecanismos potencialmente relevantes para la dimensión conductual del estigma.

Por último, los resultados cualitativos sugieren que la implicación de los usuarios y la forma en que interpretan el contenido forman parte del propio proceso de cambio. En este sentido, la tesis apunta a que los modelos teóricos deberían considerar no solo los objetivos previstos de la intervención (como la reducción del estigma o la mejora de la alfabetización), sino también cómo los usuarios traducen esos contenidos en mayor sensación de competencia, respuestas más adecuadas y menor juicio hacia la conducta suicida (Putri et al., 2025; Chen et al., 2024).

Implicaciones clínicas

En primer lugar, esta tesis pone de relieve la relevancia clínica de abordar el estigma hacia el suicidio como una prioridad transversal en prevención del suicidio. Más allá de dificultar la revelación del malestar y la búsqueda de ayuda, el estigma puede contribuir a procesos de exclusión social que reducen el acceso oportuno al apoyo y la aceptabilidad de la atención, en línea con los esfuerzos internacionales actuales que sitúan su reducción como un componente necesario de las estrategias preventivas integrales (Thornicroft et al., 2022, 2024).

En segundo lugar, la disponibilidad de instrumentos breves y culturalmente adaptados para contextos hispanohablantes constituye una implicación práctica importante, ya que puede facilitar tanto el cribado como la monitorización de variables relevantes en entornos clínicos y comunitarios. En particular, las medidas breves y de administración digital pueden facilitar tanto la detección inicial como el seguimiento de estas variables de forma más ágil y accesible, también fuera de la consulta presencial, algo especialmente relevante en el contexto actual de expansión de los enfoques digitales en prevención del suicidio (Coppersmith et al., 2023; Burr et al., 2023).

En tercer lugar, la tesis ofrece orientaciones aplicadas para el diseño de iniciativas preventivas, al sugerir que las intervenciones pueden ser más útiles cuando se adaptan a la población diana y no se formulan como mensajes uniformes para todos. Esto implica atender a las barreras concretas que dificultan la revelación y el acceso a la ayuda, proporcionar información clara y práctica sobre cómo y dónde pedir apoyo, y fortalecer la alfabetización en suicidio también en las redes sociales próximas, favoreciendo así respuestas de apoyo informal y la recomendación de ayuda profesional cuando exista riesgo (Ashton et al., 2018; Thornicroft et al., 2022; Cruwys et al., 2018). Asimismo, los resultados subrayan la necesidad de cuestionar de forma explícita las narrativas que normalizan o glorifican el suicidio, dado que pueden debilitar la prevención y desalentar la búsqueda de ayuda (Oexle et al., 2022).

Por último, RomSi ilustra el potencial de las intervenciones breves apoyadas en tecnología como complemento práctico a los recursos existentes en contextos clínicos y comunitarios hispanohablantes, siempre que se implementen con procedimientos claros de seguridad y con apoyos que favorezcan la adherencia.

Futuras direcciones de investigación

De acuerdo con los hallazgos de esta tesis, las futuras investigaciones deberían seguir reforzando la base empírica en tres áreas complementarias: medición, eficacia e implementación en contextos reales.

En primer lugar, sería conveniente ampliar la evidencia psicométrica de los instrumentos validados, evaluando su estabilidad temporal, la invariancia de medida en distintos grupos relevantes (por ejemplo, según región, edad o nivel educativo) y su capacidad para relacionarse de manera coherente con otras variables clínicamente significativas, así como para predecir resultados importantes a lo largo del tiempo.

En segundo lugar, convendría replicar las relaciones observadas en muestras más amplias y diversas, con mayor representación de hombres y de personas con mayor sintomatología clínica, e incorporar diseños longitudinales que permitan clarificar la direccionalidad entre estigma, alfabetización y variables relacionadas con

la búsqueda de ayuda, además de examinar si los cambios en estas variables se mantienen con el tiempo. En paralelo, la investigación cualitativa en grupos clínicamente relevantes o infrarrepresentados podría ayudar a comprender mejor las barreras percibidas, los matices culturales del lenguaje y del significado, y posibles mecanismos de cambio menos visibles en las medidas cuantitativas.

En tercer lugar, el ensayo controlado actualmente en marcha permitirá valorar con mayor solidez la eficacia de RomSi y la durabilidad de sus efectos, así como esclarecer mejor cómo funciona la intervención (por ejemplo, mediante la reducción de la normalización/glorificación del suicidio o el aumento de la alfabetización) y en qué perfiles podría resultar más beneficiosa, lo que facilitará su optimización y adaptación futura.

Por último, sería importante extender el desarrollo y la evaluación de intervenciones a otras poblaciones especialmente relevantes, como personas con ideación suicida, supervivientes en duelo por suicidio o grupos clave de detección y apoyo, como profesionales sanitarios, docentes o primeros intervinientes. En estos grupos, convendría priorizar resultados conductuales (como acciones de apoyo, derivaciones o uso de recursos) además de las intenciones, e incorporar adaptaciones cocreadas que mejoren la aceptabilidad, el ajuste cultural y la seguridad. Asimismo, dado que la mejora del estigma y de la alfabetización puede no ser suficiente por sí sola para aumentar de forma clara la búsqueda de ayuda formal, futuras intervenciones deberían examinar también otros determinantes relevantes, como las normas sociales, la autoeficacia, las barreras de acceso o la navegación por los servicios.

6.4.4. Conclusión

En conjunto, esta tesis doctoral aporta nueva evidencia empírica sobre el estigma hacia el suicidio y la alfabetización en contextos hispanohablantes, destacando su relevancia para la prevención. A lo largo de cinco estudios complementarios, avanza en la evaluación y comprensión de estos constructos y

desarrolla y evalúa preliminarmente una aplicación móvil dirigida a mitigar estas barreras y favorecer la búsqueda de ayuda. En gran medida, estos hallazgos sientan una base para futuras investigaciones y para el diseño de estrategias preventivas multicomponentes, apoyadas en tecnología, orientadas a promover respuestas más abiertas, responsables y empáticas ante el suicidio en contextos clínicos y comunitarios.

CHAPTER 7.

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ANNEXES.

General Annex

Ethical Committee approvals



Informe Dictamen Favorable Trabajos académicos

C.P. - C.I. PI20/294

24 de junio de 2020

Dña. María González Hincos, Secretaria del CEIC Aragón (CEICA)

CERTIFICA

1º. Que el CEIC Aragón (CEICA) en su reunión del día 24/06/2020, Acta Nº 14/2020 ha evaluado la propuesta del Trabajo:

Título: Propiedades psicométricas de la Escala de Estigma del Suicidio y la Escala Sobre el Conocimiento del Suicidio en población general

Alumno: Jesús Falceto Fernández
Director: Jorge Javier Osma López

Versión protocolo: V 2.0 de 14/06/2020

Versión documento de información y consentimiento: V 2.0 de 14/06/2020

2º. Considera que

- El proyecto se plantea siguiendo los requisitos de la Ley 14/2007, de 3 de julio, de Investigación Biomédica y los principios éticos aplicables.
- El Tutor/Director garantiza la confidencialidad de la información, la obtención de los consentimientos informados, el adecuado tratamiento de los datos en cumplimiento de la legislación vigente y la correcta utilización de los recursos materiales necesarios para su realización.

3º. Por lo que este CEIC emite **DICTAMEN FAVORABLE** a la realización del proyecto.

Lo que firmo en Zaragoza

GONZALEZ
HINJOS MARIA -
DNI 03857456B

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María González Hincos
Secretaria del CEIC Aragón (CEICA)

Referencia de la solicitud 2024-PSILOG-3563219

El comité Ético de Investigación en Humanos de la Comisión de Ética en Investigación Experimental de la Universitat de València,

CERTIFICA:

Que el Comité d'Ètica d'Investigació en Humans, en la reunió celebrada el día 03 de Octubre de 2024, una vez estudiado el proyecto de tesis doctoral: *"Desarrollo y validación de una intervención digital para potenciar la alfabetización y reducir el estigma asociado al suicidio: RomSi (Rompiendo el Silencio)"*,

Cuyo/a responsable es D/Dña.

MAITENA PIERANTONELLI GONZALEZ, dirigida por D/Dña. ROSA MARIA BAÑOS RIVERA

ha acordado informar favorablemente el mismo.

Y para que conste, se firma el presente certificado

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Study 1 Annex

1.1 Spanish version of SOSS-SF

The Stigma of Suicide Scale – Short Form (SOSS-SF)

Utilizando la siguiente escala, por favor, valora en qué medida estás de acuerdo con las descripciones de las personas que fallecen por suicidio.

"En general, las personas que se suicidan son/están..."

	Completamente en desacuerdo	En desacuerdo	Ni de acuerdo ni en desacuerdo	De acuerdo	Completamente de acuerdo
Valientes	☐	☐	☐	☐	☐
Cobardes	☐	☐	☐	☐	☐
Implicadas	☐	☐	☐	☐	☐
Desconectadas	☐	☐	☐	☐	☐
Vergonzosas	☐	☐	☐	☐	☐
Inmorales	☐	☐	☐	☐	☐
Irresponsables	☐	☐	☐	☐	☐
Aisladas	☐	☐	☐	☐	☐
Solas	☐	☐	☐	☐	☐
Perdidas	☐	☐	☐	☐	☐
Nobles	☐	☐	☐	☐	☐
Patéticas	☐	☐	☐	☐	☐
Superficiales	☐	☐	☐	☐	☐
Fuertes	☐	☐	☐	☐	☐
Estúpidas	☐	☐	☐	☐	☐
Vengativas	☐	☐	☐	☐	☐

1.2 Spanish version of SIDAS

Suicidal Ideation Attributes Scale (SIDAS)

1. Por favor, indica en qué frecuencia has tenido **el último mes** pensamientos de suicidio:

0	1	2	3	4	5	6	7	8	9	10
Nunca										Siempre

Si en la pregunta anterior has contestado "Nunca", puedes dejar sin responder las preguntas siguientes. Si no, por favor sigue respondiendo:

2. En el último mes, ¿cuánto control has tenido sobre estos pensamientos?

0	1	2	3	4	5	6	7	8	9	10
Sin control										Control total

3. En el último mes, ¿qué tan cerca has estado de llevar a cabo un intento de suicidio?

0	1	2	3	4	5	6	7	8	9	10
No he estado cerca										Lo he intentado

4. En el último mes, ¿en qué medida te has sentido atormentado/a por los pensamientos sobre el suicidio?

0	1	2	3	4	5	6	7	8	9	10
Nada										Extremadamente

5. En el último mes, ¿cuánto han interferido los pensamientos sobre el suicidio en tu capacidad para realizar actividades diarias, como el trabajo, tareas domésticas o actividades sociales?

0	1	2	3	4	5	6	7	8	9	10
Nada										Extremadamente

1.3 Spanish version of LOSS-SF

Literacy Of Suicide Scale – Short Form (LOSS – SF)

Por favor, lee las siguientes afirmaciones e indica si piensas que son verdaderas o falsas:

	Verdadero	Falso	No lo sé
1. Si las personas que han muerto por suicidio hubiesen sido evaluadas por un/a psiquiatra, se les habría diagnosticado una depresión.	☐	☐	☐
2. Ir al psiquiatra o al psicólogo/a puede ayudar a evitar el suicidio.	☐	☐	☐
3. La mayoría de las personas que mueren por suicidio son psicóticas.	☐	☐	☐
4. Las personas que hablan de suicidarse rara vez se suicidan.	☐	☐	☐
5. Hablar de suicidio siempre aumenta el riesgo de suicidio.	☐	☐	☐
6. No todos los intentos de suicidio se planifican de antemano.	☐	☐	☐
7. Las personas que tienen pensamientos suicidas no deben contárselo a nadie.	☐	☐	☐
8. Muy poca gente tiene pensamientos suicidas.	☐	☐	☐
9. Los hombres son más propensos al suicidio que las mujeres.	☐	☐	☐
10. Un suicida siempre será un suicida y albergará pensamientos suicidas.	☐	☐	☐

Table 1.4*Standardized Factor Loadings for SOSS-SF*

Item	Factor loadings		
	Stigma	Isolation	Glorification
15. Stupid	0.75		
13. Shallow	0.74		
6. Immoral	0.73		
7. Irresponsible	0.70		
12. Pathetic	0.69		
16. Vengeful	0.68		
2. Cowdry	0.62		
5. An embarrassment	0.48		
8. Isolated		0.75	
9. Lonely		0.71	
4. Disconnected		0.62	
10. Lost		0.58	
14. Strong			0.78
1. Brave			0.59
11. Noble			0.50
3. Dedicated			0.35

Note. Factor loadings with magnitude greater than .40 are shown. All values are significant at $p < .001$

Study 3 Annex

Table 3.1.

Values-Consistent Actions Endorsed by Participants During the Intervention

Participant	What actions could you take that are more aligned with those values?
1	Listen more, pay attention to myself and those around me.
2	<i>No response.</i>
3	Listen and offer help.
4	Offer a supportive and empathic ear. Observe without judging but with enough attention to perceive warning signs and offer help to draw the person away from isolation.
5	<i>No response.</i>
6	<i>No response.</i>
7	Listen, provide support, not judge without knowing the full reality...
8	Be more empathic.
9	Be willing to listen when needed, talk about the topic, listen without judging.
10	Listen without judging, offer help, help find professional resources, and show my support.
11	Listen without judging, talk about the topic, let the person know they can count on me if they want and need it, share my own experience to give a voice to a problem that is still very silenced, pay attention to others if I notice warning signs.
12	Be there for the person I know needs my help, even if they do not explicitly ask for it.
13	Offer help.
14	Not avoid the topic and offer support.

- 15 Understand the person, show empathy, and try to make them see that I understand them and will be by their side...
- 16 Always offer active listening even if I cannot find the right words to respond, try to understand what is happening and encourage seeking professional help if necessary, help find alternative resources if psychological care is not possible for whatever reason...
- 17 Offer support to those who need it, showing closeness and without judging, and trying to help as much as possible.
- 18 Listen even when I don't have the perfect words.
- 19 Offer help even when not asked, show them they are not alone, broaden my perspective so they can feel understood and know they are not alone.
- 20 Listen and be present, show empathy and openness when talking about it, provide support.
- 21 Pay more attention to people who seem isolated, not assume that people have someone close who checks in on them, and if I see someone needs help, insist even if they refuse my first attempt.
- 22 Be present, not leave them alone.
- 23 *No response.*
- 24 Seek more information, ask the person directly how they are feeling or what I can do to help them feel better, show support, be attentive to their needs, be more present, look for solutions or alternatives together.
- 25 Ask how they are doing and talk about the topic without judging, listening without interrupting and showing compassion and empathy.
- 26 Truly listen to people, even when my day is full of things to do.
- 27 *No response.*
- 28 Offer support and listen.
- 29 I have learned that you have to show that you are there to listen, and that keeping distance out of respect for someone's privacy can prevent them from feeling they can open up if something is wrong. It is a difficult balance, but I have learned that a sincere question can make a difference.

- 30 Offer help and support whenever needed.
- 31 Offer support.
- 32 *No response.*
- 33 Learn more about the situation and what I should do to provide the best and most appropriate support possible.
- 34 Listen to the person and understand their point of view, showing support and help without judging their thoughts.
- 35 First, I would inform myself on how to hold such a conversation. Then I would most likely speak directly to that person to tell them I will listen without judging, that they can trust me, that I will be there for them, that they are not alone and are not a burden. We all deserve to be listened to and supported, and that is not a burden.

Note. Responses were originally collected in Spanish and translated into English by the authors.

Study 4 Annex

Table 4.1.

Overview of Assessment Measures and Time Points

Measure	T0	T1	T2	T3	T4
Demographics	X				
<i>Primary outcomes</i>					
General Help-Seeking Questionnaire (GHSQ)	X	X	X	X	X
Stigma of Suicide Scale – Short Form (SOSS-SF)	X	X	X	X	X
Literacy of Suicide Scale - Short Form (LOSS-SF)	X	X	X	X	X
<i>Secondary outcomes</i>					
Marlowe-Crowne Social Desirability Scale (MC-SDS)	X				
<i>Clinical outcomes:</i>					
Patient Health Questionnaire-9 (PHQ-9)	X	X	X	X	X
Generalized Anxiety Disorder-7 item scale (GAD-7)	X	X	X	X	X
Suicidal Ideation Attributes Scale (SIDAS)	X	X	X	X	X
<i>Only those who present suicidal ideation:</i>					
Personal Suicide Stigma Questionnaire (PSSQ)	X	X	X	X	X
<i>Usability and Acceptability of the Intervention</i>		X			

Figure 4.1.

Daily Assessment on each Day of the 10-Day Intervention.



Note. A = daily stigma adjectives; B = exposure to suicide-related content; C = SIDAS; D = GHSQ.

4.2. Resumen del contenido de la aplicación móvil Rompiendo el Silencio (RomSi)

Este anexo ilustra el contenido de la aplicación móvil a través de ejemplos seleccionados de cada sección.

SECCIÓN 0. BIENVENIDA

TESTIMONIO INTRODUCTORIO



*Hace tiempo que me cuesta expresar cómo me siento. No sé cómo hacerlo y, además, me da vergüenza. Siento que **necesito ayuda para poder romper mi silencio.***

*A muchas personas les pasa lo mismo. Se sienten tristes o tienen pensamientos dolorosos, pero **no saben cómo expresarlos ni a quién pedir ayuda.***

*En salud mental, todavía existen muchos tabúes. Se habla poco de algunos temas y **el estigma sigue siendo muy fuerte.** Las personas que nos sentimos mal lo notamos, lo sentimos.*

***Uno de los temas más estigmatizados es la ideación o conducta suicida.** Y sobre eso vamos a hablar en este programa.*

*Con tu ayuda, espero **sentirme cada vez más capaz de hablar de mí, de lo que me pasa, sin miedo ni vergüenza.** Y también poder pedir ayuda si lo necesito.*

Espero que quienes paséis por RomSi podáis aprender, desmontar mitos, y contribuir así a prevenir el suicidio y a reducir el estigma que lo rodea.

Nota. Todos los testimonios de la aplicación aparecen con este formato para distinguirlos del contenido informativo.

SECCION 1. EL ESTIGMA Y SUS CONSECUENCIAS

Parte 1. ¿Qué es el estigma hacia el suicidio y cómo nos afecta?

TESTIMONIO

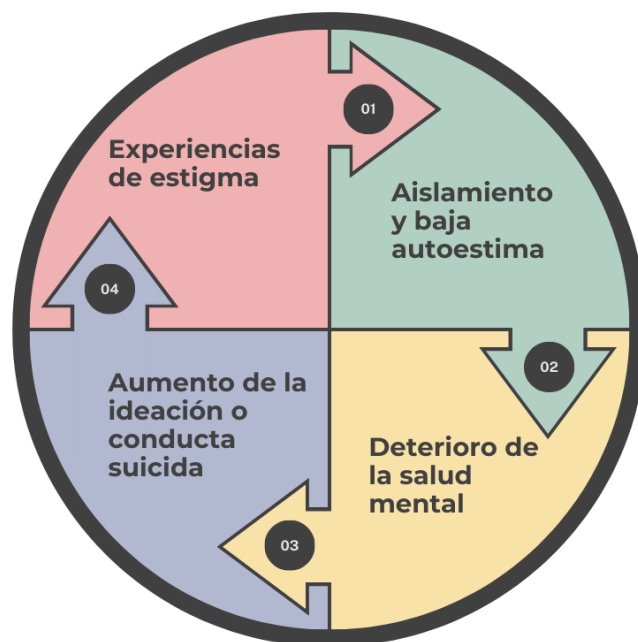
“Hace un tiempo me sentía atrapado en el dolor, sin esperanza. Pensaba que ya no podía más, que no tenía fuerzas para seguir con mi vida. Un día, agotado de luchar y sintiendo que no había salida, intenté quitarme la vida. Afortunadamente no lo conseguí, pero a partir de ese momento, en lugar de sentir apoyo, encontré rechazo, incluso entre los que

yo más quería. Mi familia estaba enfadada y se alejaron de mi, convencidos de que era egoísta y cobarde.

Llevaba demasiado tiempo ocultando mi sufrimiento, minimizando mi dolor para no cargar a nadie. Pero el miedo a lo que pensarían los otros, el estigma que sentía, me aislaba aún más. Decidí pedir ayuda y hoy sigo aquí. No fue fácil, pero entendí que el dolor no me hacía menos valioso y que pedir ayuda no es debilidad, sino un acto de valentía.”

EL CICLO DEL ESTIGMA

La sección explica el ciclo del estigma hacia el suicidio, ilustrado mediante la siguiente infografía:



Parte 2. ¿Cómo surge y cómo podemos cambiarlo?

EJERCICIOS DE REFLEXIÓN

Para introducir el concepto de estigma, la sección incluye dos ejercicios breves:

Encuentra la palabra que en tu opinión no encaja

En cada conjunto de palabras hay una que no encaja con las demás. Piensa cuál es

- Manzana – Avión - Plátano – Fresa
- Pediatra– Policía – Oficinista– Cuchara
- Depresión– Fortaleza– Debilidad– Dificultad
- Diabetes- Incapacidad- Molestia- Bienestar

Completa la frase

Lee cada una de las siguientes frases y complétalas mentalmente con lo primero que se te venga a la cabeza. Hazlo de forma rápida y espontánea, sin pensarlo demasiado.

- Las personas con depresión se caracterizan por ...
- Las personas que padecen una enfermedad física se caracterizan por....
- Las personas que piensan en el suicidio se caracterizan por ...

ORIGEN DE LAS ASOCIACIONES AUTOMÁTICAS



Mediante un video se explica cómo el lenguaje y la cultura generan asociaciones automáticas que alimentan el estigma. A continuación se recoge un extracto:

"¿Alguna vez te ha pasado que una palabra te hace pensar automáticamente en otra, sin saber muy bien por qué? El lenguaje no solo nos sirve para comunicar, sino también para clasificar y etiquetar. [...] Tendemos a relacionar ideas y personas, aunque no haya conexión directa. Solo porque el lenguaje y nuestra cultura nos lo enseñan. [...] El estigma en salud mental es una de las principales barreras que impiden que las

personas pidan ayuda y reciban el apoyo que necesitan. [...] Cuestionar estas asociaciones es un primer paso para tratar a los demás —y también a nosotros mismos— con más compasión y menos juicio."

DIMENSIONES DEL ESTIGMA

Se presenta las tres formas en que el estigma se manifiesta a nivel social, ilustradas con ejemplos del testimonio de la persona de contacto



TESTIMONIOS: DIMENSIONES DEL ESTIGMA

Luego de una breve explicación de cada dimensión (cognitiva, emocional y conductual), se brindan testimonios ejemplificadores:

Estereotipos: *"En mi caso los demás piensan que soy responsable de mi sufrimiento. Que si quiero puedo cambiar, que es solo falta de voluntad."*

Prejuicios: *"En mi caso me han transmitido que han sentido desconfianza y también miedo"*

Discriminación: *“En mi caso he notado desprecio e indiferencia por parte de muchas personas. Me ha costado conseguir empleo y mis amistades se han alejado de mí”*

¿CÓMO PODEMOS CAMBIARLO?

La sección cierra con una reflexión sobre el impacto colectivo del estigma y la importancia de cambiar la forma en que hablamos y escuchamos sobre el suicidio:

"A lo largo de los siguientes apartados, intentaremos confrontar estas creencias erróneas [...] El estigma hacia el suicidio no solo afecta a quienes están en crisis, nos afecta a todos como sociedad. Si cambiamos la forma en que hablamos y escuchamos, podemos hacer que pedir ayuda sea más fácil y, de esta forma, estamos salvando vidas."

PREGUNTA DE OPCIÓN MÚLTIPLE SOBRE EL CONTENIDO

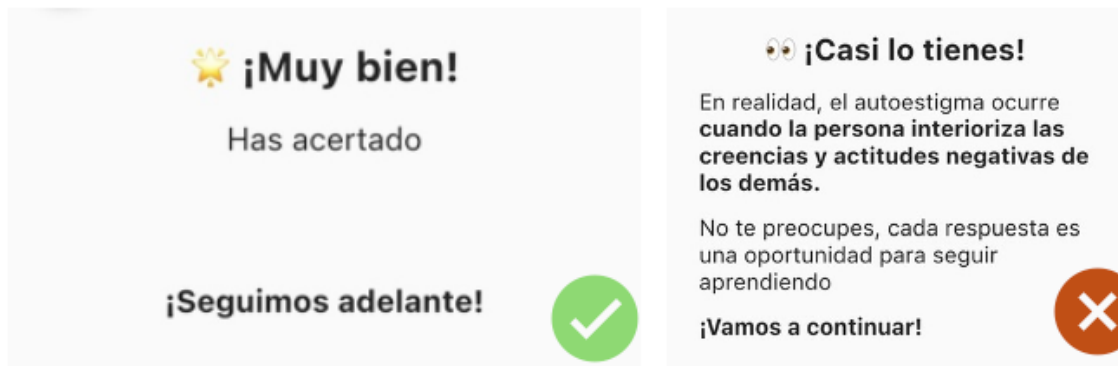
Al final de cada parte, la aplicación incluye una pregunta de comprensión sobre el contenido que el usuario acaba de ver. Si la respuesta es incorrecta, la aplicación indica cuál era la respuesta correcta y anima a seguir aprendiendo. A continuación se muestra un ejemplo:

A continuación, encontrarás una breve pregunta sobre lo que acabas de ver. Lee bien las opciones y selecciona la que consideres más adecuada.

Se conoce como autoestigma:

- A. Cuando la persona que lo sufre acaba interiorizando las creencias y actitudes negativas de los demás. *[RESPUESTA CORRECTA]*
- B. Aquello que los demás piensan sobre alguien que tiene ideación suicida
- C. Los comportamientos de los demás hacia alguien que tiene ideación suicida

FEEDBACK SEGÚN LA RESPUESTA



SECCION 2. IMPORTANCIA DEL SUICIDIO Y CÓMO AYUDAR

Parte 1. El suicidio y su prevalencia

¿POR QUÉ EL SUICIDIO ES UN PROBLEMA IMPORTANTE?

Los usuarios reciben información acerca de las cifras y prevalencia del suicidio por medio de infografías, por ejemplo:

- Cada 45 segundos, una persona muere por suicidio en el mundo. En total, más de 700.000 personas fallecen por suicidio cada año.
- La mitad de las personas que se suicidan vieron a su médico el mes anterior, y 1 de cada 6, ese mismo día.
- Se estima que entre 60 y 135 personas se ven afectadas por cada suicidio. No solo impacta a quien muere o lo intenta: también deja una huella profunda en sus familiares, amistades y entorno cercano. El dolor se extiende como las olas en el agua.

¿QUÉ ES EL SUICIDIO?

Mediante un vídeo se explica el proceso que va desde los pensamientos suicidas hasta las conductas suicidas, y cómo la comunicación es clave para prevenirlo. A continuación se recoge un extracto:

"El suicidio no es una cuestión de todo o nada. Investigaciones recientes explican el suicidio como un 'continuo': un proceso que va desde los pensamientos suicidas hasta las conductas suicidas. [...] Entre la ideación y el intento de suicidio, puede ocurrir la

comunicación suicida: el momento en que la persona expresa su sufrimiento o su intención de hacerse daño, ya sea de forma directa o indirecta. [...] Dentro de las conductas suicidas, existen las autolesiones, es decir, conductas en las que la persona se infringe algún daño como forma de afrontar una angustia intensa. En la mayoría de los casos, no buscan el suicidio, sino aliviar el malestar."



TESTIMONIO

"Cuando se experimentan pensamientos suicidas, es crucial no quedarse inmóvil. Lo más importante es evitar la soledad. Te puedes sentir cada vez más atrapada en esos pensamientos, una y otra vez, sin poder soltarlos. El aislamiento se convierte en tu mayor enemigo. Es muy importante que contactes con alguien y que pidas ayuda."

Parte 2. Factores implicados

¿CUÁLES SON LOS FACTORES DE RIESGO Y PROTECTORES?

La sección explica que el suicidio resulta de una combinación de factores de riesgo que van más allá de los trastornos de salud mental, incluyendo el abuso de sustancias, el aislamiento social, la violencia interpersonal y los intentos previos. Se destacan también los factores protectores que pueden reducir el riesgo, como contar con una red de apoyo —amigos, familia o profesionales que escuchen— y el acceso a ayuda psicológica y estrategias para afrontar el estrés.

Parte 3. Señales de advertencia

¿CÓMO RECONOCER SI ALGUIEN NECESITA AYUDA?

Se destaca una serie de señales comunes, por ejemplo:

- Hablar sobre hacerse daño o quitarse la vida
- Decir sentirse una carga para los demás
- Tener un plan concreto para quitarse la vida
- Mostrar interés recurrente en la muerte (en conversaciones, dibujos, redes sociales...)
- Presentar cambios de humor extremos

TESTIMONIO

“Todo me resultaba un desafío, tanto física como mentalmente. Recuerdo que un día, mientras estaba en el trabajo, un compañero me miró y me preguntó: '¿Estás bien?' Fue una pregunta simple, pero mi respuesta no lo fue: 'No, no creo que lo esté. Estuve toda la noche con pensamientos oscuros y no pude descansar.' Él me miró serio y me dijo: 'Esto es grave, deberías buscar ayuda.' No tuvimos tiempo de profundizar en la conversación porque estábamos en plena jornada, pero esas palabras cambiaron mi perspectiva en ese momento.”

Parte 4. Cómo ayudar

¿CÓMO PODEMOS AYUDAR?

La sección ofrece orientación práctica sobre cómo apoyar a alguien que puede estar en riesgo, destacando que no hace falta tener las palabras perfectas sino estar presente y demostrar que nos importa. Se presentan tres tipos de contenido:

En primer lugar, se proponen preguntas para iniciar una conversación, como *"Me preocupa cómo has estado últimamente, ¿podemos hablar?"* o *"Sé que estás pasando por un momento difícil, ¿quieres contarme qué te ocurre?"*

A continuación, se anima a hacer preguntas directas sobre el suicidio, aclarando que preguntar abiertamente no aumenta el riesgo sino que puede ser un alivio para la persona. Se ofrecen ejemplos como *"¿Has pensado en hacerte daño?"* o *"¿Tienes ganas de acabar con tu vida?"*

Por último, se indica qué es importante no decir —frases que minimizan el sufrimiento como *"No puede ser para tanto"* o *"Tienes tanto por lo que vivir"*— y qué es importante no hacer, como dejar a la persona sola si está en riesgo inmediato, juzgar su sufrimiento o guardar secretos si está en peligro.



SECCION 3. MITOS HACIA EL SUICIDIO Y SU IMPACTO

Esta sección aborda los diez mitos más comunes sobre el suicidio. Cada uno de ellos es presentado junto a información respaldada científicamente que lo desmiente, y

acompañado de un ejercicio de reflexión ilustrativo con feedback inmediato. Los mitos abordados son:

1. El suicidio no se puede prevenir
2. Las personas con conducta o ideación suicida quieren morir
3. Todas las personas que mueren por suicidio o lo intentan tienen un trastorno mental
4. El suicidio siempre podría haberse evitado si el entorno hubiera estado más atento
5. Los intentos de suicidio son una forma exagerada de llamar la atención
6. La persona que habla de sus intenciones suicidas no las llevará a cabo
7. Si una persona se quiere suicidar, no avisa
8. La persona que tiene intentos de suicidio o muere por suicidio es un cobarde (o un valiente)
9. La prevención del suicidio solo está en manos de los profesionales de la salud mental
10. Hablar sobre suicidio puede aumentar el riesgo

A modo de ejemplo, a continuación se presentan dos mitos junto con ejercicios ilustrativos.

MITO 4: EL SUICIDIO SIEMPRE PODRÍA HABERSE EVITADO SI EL ENTORNO HUBIERA ESTADO MÁS ATENTO

No siempre es posible ver las señales. Por eso es clave hablar sobre el suicidio sin miedo ni juicio.

Muchas personas ocultan su sufrimiento por miedo o vergüenza. Hablar abierta y responsablemente del suicidio ayuda a crear espacios seguros para pedir ayuda. La prevención es una tarea colectiva que requiere empatía, escucha y acceso a apoyos profesionales.

TESTIMONIO

“Durante semanas, apenas podía seguir adelante. Me sentía vacío, como si fuera solo una sombra de mí mismo. No era la primera vez que me sentía así, pero esta vez los pensamientos eran más intensos, más difíciles de ignorar.”

No quería preocupar a los demás, así que aprendí a fingir. Sonreía, hacía bromas, actuaba como si todo estuviera bien. Pero por dentro, me sentía atrapado en un dolor que parecía no tener salida.”

EJERCICIO DE REFLEXIÓN

En 2022, la asociación CALM lanzó la campaña “La última foto” para desafiar la imagen típica del suicidio: alguien deprimido, solitario y triste. La campaña muestra que, muchas veces, quienes tienen pensamientos suicidas pueden parecer felices y exitosos.

Puedes ver la campaña en este enlace: [Suicidal Doesn't Always Look Suicidal](#)

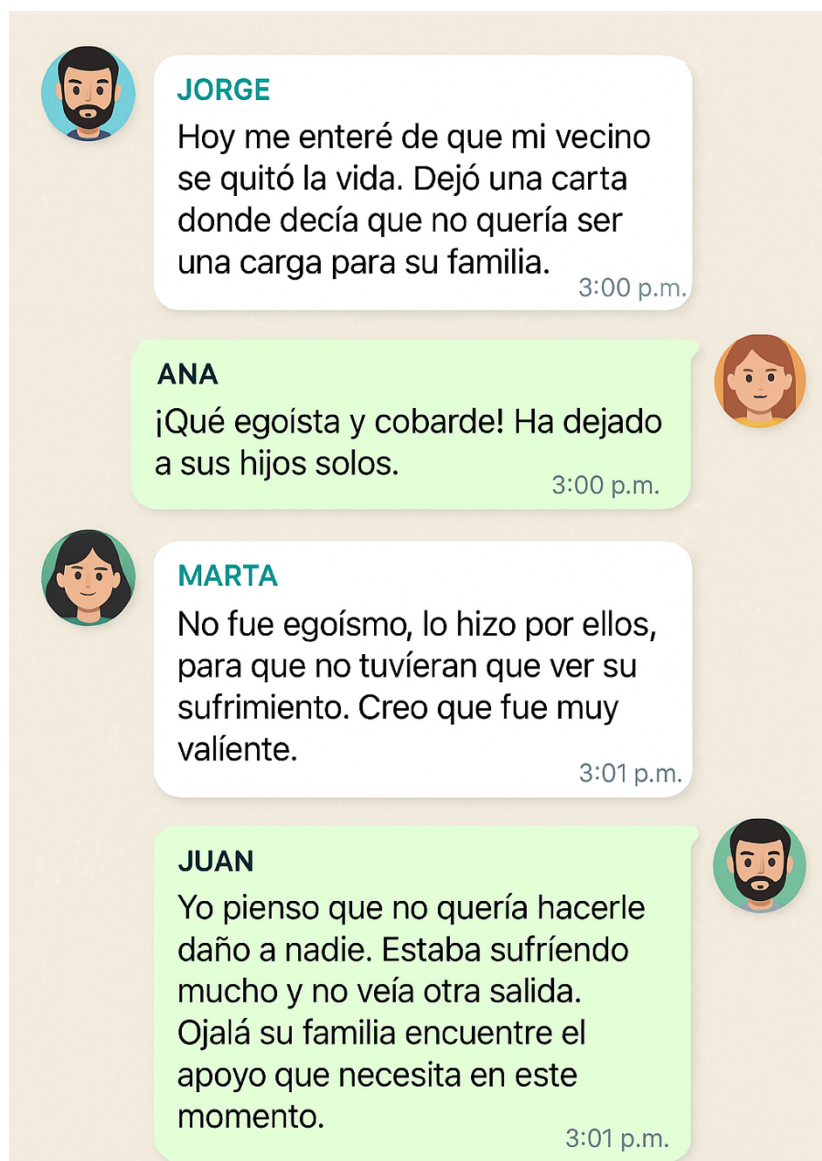
*¿Qué te ha generado este video? ¿Ha cambiado en algo tu forma de ver el suicidio?
¿Cómo? ¿Qué mensaje crees que transmite esta campaña sobre la prevención del suicidio?
¡Cuéntanos lo que quieras!*

MITO 8: LA PERSONA QUE TIENE INTENTOS DE SUICIDIO O MUERE POR SUICIDIO ES UN COBARDE (O UN VALIENTE)

La conducta suicida no es valiente ni cobarde. Muchas veces está vinculada a un intenso sufrimiento, donde la muerte se percibe como una solución a la situación vital. Asociarla con cualidades negativas, puede fomentar el menosprecio u ocultación del problema. Vincularla a valores positivos puede promover su imitación y reforzarla.

EJERCICIO DE REFLEXIÓN

A continuación, verás una conversación entre cuatro amigos. Observa con atención las distintas reacciones y reflexiones que surgen ante una situación de suicidio.



Teniendo en cuenta la conversación que acabas de leer, ¿cuál crees que podría ser la respuesta que demuestre mayor empatía y comprensión?

- A. La de Ana
- B. La de Marta
- C. La de Juan [RESPUESTA CORRECTA]

FEEDBACK SEGÚN LA RESPUESTA:

 ¡Muy bien! Has acertado ¡Seguimos adelante! 	 ¡Casi lo tienes! En realidad, la respuesta de Juan es la que demuestra mayor empatía. Las otras, por el contrario: · Ana asocia el suicidio con la cobardía. Su comentario puede generar estigmas y dificultar que quienes sufren busquen ayuda. · Marta lo interpreta como un acto valiente, lo cual podría reforzar la idea equivocada de que el suicidio es una forma de proteger a los seres queridos. No te preocupes, cada respuesta es una oportunidad para seguir aprendiendo ¡Vamos a continuar! 

SECCION 4. IMPACTO DE LOS MITOS SOBRE NUESTROS VALORES**Parte 1. Los valores****¿QUÉ SON LOS VALORES?**

Mediante un vídeo se introduce el concepto de valores, explicando que actúan como una brújula que orienta nuestras decisiones y que influyen en cómo pensamos, actuamos y vemos a los demás. Se destaca que vivir de forma coherente con los propios valores está asociado a un mayor bienestar y conexión con uno mismo, pero que a veces nuestras creencias —incluidos los mitos sobre el suicidio— pueden obstaculizar esa coherencia.



A continuación, el concepto se ilustra con dos viñetas protagonizadas por Ana y Carlos, que muestran cómo los mitos interiorizados pueden entrar en conflicto con valores como la justicia o el cuidado de los demás:

ANA



VALORA PROFUNDAMENTE LA JUSTICIA Y LA PROTECCIÓN DE TODAS LAS PERSONAS.

SIN EMBARGO, PIENSA QUE EL SUICIDIO ES UN ACTO EGOÍSTA Y COBARDE

ESTA VISIÓN PUEDE ENTRAR EN CONFLICTO CON SU VALOR DE EQUIDAD, YA QUE QUIENES ATRAVIESAN PENSAMIENTOS SUICIDAS TAMBIÉN NECESITAN COMPRENSIÓN, APOYO Y UN TRATO JUSTO, EN LUGAR DE JUICIO O RECHAZO.

DESPUÉS DE REFLEXIONAR, ANA LLEGA A LAS SIGUIENTES CONCLUSIONES:

Mitos que identifica en sí misma

"Las personas que piensan en suicidarse son egoístas y cobardes"

Valores en conflicto con esta creencia

Justicia – Igualdad – Protección de los vulnerables

Acciones en conflicto con sus valores

Juzgar a personas con ideación suicida, evitar hablar del tema, no ofrecer ayuda o apoyo emocional.

EJERCICIOS DE REFLEXIÓN

A continuación, se invita a los participantes a reflexionar sobre sus propias creencias y valores en relación al suicidio, a través de una serie de preguntas de respuesta múltiple y texto libre.

Ahora te invitamos a hacer lo mismo que Ana, y a reflexionar sobre tus propias creencias y valores.

¿Qué creencias o ideas sobre el suicidio reconoces en ti? (Puedes marcar más de una)

- El suicidio no se puede prevenir
- Las personas con conducta o ideación suicida quieren morir
- Todas las personas que mueren por suicidio o lo intentan tienen un trastorno mental
- El suicidio siempre podría haberse evitado si el entorno hubiera estado más atento.
- Los intentos de suicidio son una forma exagerada de llamar la atención
- La persona que habla de sus intenciones suicidas no las llevará a cabo
- Si una persona se quiere suicidar, no avisa
- La persona que tiene intentos de suicidio o muere por suicidio es un cobarde (o un valiente).
- La prevención del suicidio solo está en manos de los profesionales de la salud mental
- Hablar sobre suicidio puede aumentar el riesgo
- Otro: _____
- Ninguno

¿Qué valores personales sientes que no se ven reflejados en estas creencias? (Marca los que más se relacionen contigo)

- Cuidar de los demás
- Ser justo/a con todas las personas
- Comprender a quienes sufren
- Tratar a todos con respeto
- Escuchar sin juzgar
- Ayudar cuando alguien lo necesita
- Sentir empatía
- Defender la dignidad de las personas

- Promover la igualdad
- Proteger a los más vulnerables
- Otro valor importante para mí: _____
- Ninguno

¿Qué acciones has tenido que podrían no reflejar esos valores?

(Por ejemplo: evitar una conversación, juzgar a alguien, no ofrecer ayuda, guardar silencio, etc.)

Parte 2. Actuar en coherencia con nuestros valores

Se invita a los participantes a reflexionar sobre qué ocurre cuando sus creencias —a veces influidas por mitos sociales sobre el suicidio— no encajan con la persona que dicen ser.

A través de tres situaciones cotidianas y realistas, cada una vinculada a un mito específico, los participantes eligen la reacción que más se acerca a la suya propia **(1)**.

Luego, se analizan qué valores hay detrás de cada reacción posible **(2)** y propone una frase de cierre para que el participante elija cómo quiere actuar **(3)**.

Los mitos trabajados son:

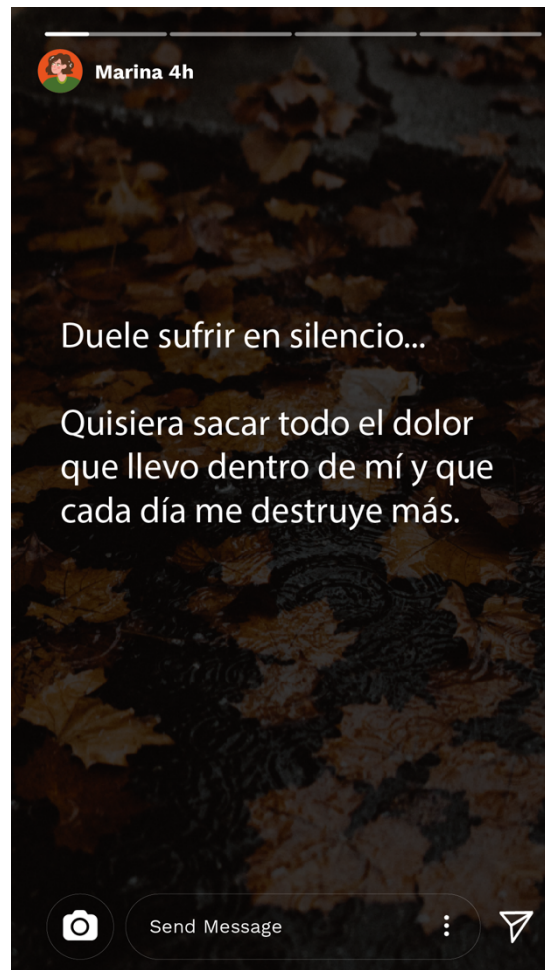
1. Los intentos de suicidio son una forma exagerada de llamar la atención
2. El suicidio siempre podría haberse evitado si el entorno hubiera estado más atento
3. La prevención del suicidio solo está en manos de los profesionales de salud mental

A modo de ejemplo, a continuación se desarrolla la situación correspondiente al primer mito.

EJERCICIO DE REFLEXIÓN

Mito 1: Los intentos de suicidio son una forma exagerada de llamar la atención

Marina ha publicado este contenido en sus redes sociales:



(1) ¿Cuál de estas reacciones se parece más a lo que tú podrías pensar o decir en una situación así?

- A. Juan piensa: *“Está exagerando. Quiere que alguien le diga lo especial que es.”*
- B. Pedro dice: *“Quizás no sabe cómo pedir ayuda. Deberíamos hablar con ella.”*
- C. Lucía comenta: *“Algo no va bien pero no quiero meterme en cosas personales”*

(2) ¿Qué valores hay detrás de cada respuesta?

JUAN Está exagerando. Quiere que le digan lo especial que es.  Este tipo de pensamiento refleja una visión del mundo centrada en la autosuficiencia y la idea de que cada uno debe resolver sus problemas sin mostrarse <u>vulnerable</u>. También puede implicar tomar <u>distancia del sufrimiento</u> ajeno, priorizando <u>valores individuales</u> por sobre la <u>preocupación por los demás</u>. Actitudes probables ligadas a este pensamiento: Ignorar señales de malestar, evitar conversaciones incómodas o emitir juicios que refuercen el estigma.	PEDRO  Quizás no sabe cómo pedir ayuda. Deberíamos hablar con ella. Esta respuesta refleja valores centrados en el <u>cuidado</u>, la <u>solidaridad</u> y la <u>empatía</u>. Implica reconocer que las personas a veces no saben <u>cómo expresar su dolor</u>. Quienes piensan así tienden a dar importancia al <u>bienestar de los demás</u> y a crear vínculos más <u>humanos</u> y <u>compasivos</u>. Actitudes probables ligadas a este pensamiento: Acercarse, preguntar con respeto, mostrar disponibilidad para hablar y validar lo que la otra persona siente.

LUCÍA



No quiero meterme en cosas personales, pero algo no va bien.

Su comentario refleja una tensión común: el deseo de respetar la intimidad del otro, pero también la inquietud por ayudar.

Reconocer este conflicto puede invitarnos a pensar en cómo queremos actuar frente al malestar ajeno.

Actitudes probables ligadas a este pensamiento:

Observar con atención, mantener una actitud alerta y abierta

(3) Completa la siguiente frase eligiendo la opción que más te represente:

"Cuando alguien está sufriendo, yo quiero..."

- A. ...ofrecer una escucha sincera, aunque no tenga las palabras perfectas
- B. ...estar cerca y mostrar que me importa
- C. ...respetar su espacio, pero hacerle saber que no está solo/a

Parte 3. Pasar a la acción

EJERCICIO DE REFLEXIÓN

La sección cierra con una invitación a la reflexión y al cambio.

Se retoma el ejercicio de la Parte 1, invitando a los participantes a responder las mismas preguntas desde una nueva mirada:

- ¿Qué creencias o ideas sobre el suicidio has empezado a cuestionar o ya no compartes?
- ¿Qué valores personales sientes que ahora guían más tu forma de pensar sobre el suicidio y el sufrimiento emocional?
- ¿Qué acciones puedes llevar a cabo que estén más alineadas con esos valores?

TESTIMONIO FINAL

"¡Hemos llegado al final de RomSi! Muchas gracias por acompañarme durante todo el programa.

Juntxs hemos conseguido romper un poco más el silencio que hay alrededor de la ideación o conducta suicida. Me siento mucho mejor. Y con ello, seguro que hemos contribuido de alguna manera a su prevención.

Te animo a seguir comprometidx con desmontar los mitos entorno a esta problemática, con no mirar hacia otro lado si te la encuentras de alguna manera en tu entorno y con animar a pedir ayuda, o hacerlo tú si en algún momento la necesitas.

RomSi acaba, pero la lucha contra el estigma sigue."

4.3 QR code for access to the BrakSi demonstration video



