Challenges in Anonymous Helplines Protecting User Safety from Gambling Harm

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Abstract—**Individuals suffering from the harms of gambling face severe and complex crises, such as suicide, bankruptcy, and social stigma. The emergence of anonymous helplines provides convenient digital support channels with privacy protection. However, it remains unclear whether effective professional interventions can be delivered through helplines while maintaining privacy. To address this gap, we conducted semi-structured interviews with 13 professional service providers in the Macao gambling harm helpline sector to understand the trade-offs between privacy and usability in the anonymous helpline model. Our findings reveal that protecting help-seekers' privacy limits the effectiveness, efficiency, and satisfaction of helplines, while also presenting additional challenges for service providers, including privacy concerns, skill development, and the use of technology to optimize interventions. Based on these insights, we offer design recommendations for helpline systems, providing valuable guidance for developing general helplines aimed at supporting vulnerable users in need of easily accessible help.**

1. Introduction

Gambling harm is known to negatively affect individuals, families, and communities [1], particularly those who suffer from gambling-related crises, such as financial collapse, family breakdown, and suicidal ideation [2]. In response, specialized organizations have been established to provide professional psychological interventions for individuals actively seeking help [3]. However, individuals experiencing gambling harm often encounter significant public stigma, with stereotypes labeling them as "greedy" and "deserving punishment". This stigma drives their need for concealment and anonymity [4]. As a result, helpline services have emerged as a primary intervention method, offering greater accessibility [5] and anonymity [3] compared to face-to-face services. For those who seek help via helplines, access to professional intervention has been shown to effectively mitigate gambling-related harm [6], [7], [8].

Although help-seekers can benefit from helplines while maintaining anonymity, it remains unclear how these services balance privacy protection with usability. This is a critical issue, as helplines rely on professional interventions from service providers to assist help-seekers [3]. These interventions often require service providers to gain a comprehensive understanding of the help-seeker's situation, including financial circumstances, family dynamics, and employment status, as well as to offer ongoing support [9]. Since protecting the privacy of individuals affected by gambling harm is a fundamental priority [10], it is crucial to examine whether service providers can deliver effective professional interventions via helplines while maintaining this privacy, and the challenges they face in doing so. While prior research has predominantly focused on the characteristics, motivations of help-seekers using gambling helplines [11], [12], the perspective of service providers, particularly regarding the usability of helpline systems under privacy constraints, remains significantly underexplored.

To address these gaps, our study examines gambling helpline services from the perspective of service providers, focusing on two key aspects of their experiences: First, when supporting privacy-sensitive individuals through anonymous helpline platforms, we investigate how service providers perceive the usability of gambling helpline systems —specifically, whether these systems facilitate or hinder the delivery of psychological interventions under the primacy of privacy. This leads to our first research question (RQ):

- RQ1: What perceptions of usability do gambling helpline service providers report when supporting privacy-sensitive individuals through anonymous helpline systems?

Second, we investigate the challenges service providers face when engaging in intervention work during interaction with individuals with severe crises. Accordingly, we propose RQ2:

- RQ2: What challenges do service providers perceive when delivering interventions to individuals affected by gambling harm through helpline services?

We conducted semi-structured interviews with gambling helpline service providers(n = 13) in Macao, the world's leading gambling hub, which has a well-established system of gambling support services [13], to explore their perceptions of helpline usability and the challenges they face during intervention.

We first explore gambling helpline service providers' perceptions of the usability when supporting privacy-sensitive individuals through anonymous helpline systems (RQ1), drawing on three commonly used dimensions in usability research [14]: effectiveness, efficiency, and satisfaction. Regarding perceptions of **effectiveness**, service providers acknowledged that the helpline model enables multi-dimensional assessment of help-seekers' emotional states and urgency, while also recognizing its limitations in addressing privacy concerns, information-withholding behaviors, and the lack of digital tools for advanced therapeutic techniques. Regarding perceptions of **efficiency**,

providers emphasized that the helpline can enable safe and timely interventions and facilitate the exchange of supporting materials in complex cases. Nonetheless, they also noted challenges, especially that the systems provide limited mechanisms for reducing communication barriers related to language and culture. Regarding perceptions of **satisfaction**, providers highlighted that existing communication modes generally make interactions comfortable for privacy-sensitive individuals. Yet they also reported that the intensity of real-time communication may be mentally exhausting, raising concerns about the sustainability of support over time.

Next, we examine the challenges service providers perceive when delivering support to users suffering from gambling harm (RQ2). These challenges reflect the experiences of service providers in helpline settings, beyond just the usability of specific systems. Our analysis reveals three key findings. First, at the individual level, providers express concerns about balancing personal privacy with effective intervention. Second, at the organizational level, they highlight the lack of adequate training and support for addressing gambling help-seekers' complex needs. Third, at the technological level, they view emerging tools with ambivalence—acknowledging their potential while also raising ethical and practical concerns. Based on our findings, we first explore the inherent tension between privacy protection and intervention effectiveness in gambling helplines. We then discuss broader systemic and contextual challenges faced by digital platforms in delivering care for vulnerable populations. Finally, we present a set of design implications to address these issues, organized from a system architecture perspective of the helpline.

Our work makes two key contributions. First, using gambling harm helplines as a case study, we examine the trade-offs in anonymous digital helpline models between protecting help-seekers' privacy and enabling service providers to deliver professional interventions. This extends privacy and usability research [15], highlighting that the tension between privacy and usability exists not only from the user's perspective but also in terms of the usability for service providers supporting these privacy-sensitive individuals. Second, we provide design implications for digital helplines that support privacy-sensitive, vulnerable groups while addressing the challenges faced by service providers. This perspective not only highlights limitations specific to gambling helplines but also offers valuable insights for designing general helpline systems aimed at supporting vulnerable users who need easily accessible help.

2. Background

In this section, we provide background information on gambling harm and the role of gambling helplines, including their intervention processes, to help readers better understand the context of our study
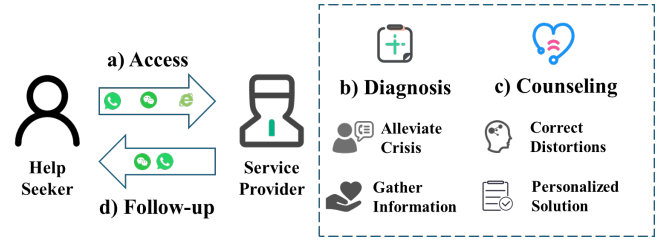

Figure 1: Workflow of gambling helpline intervention process.

2.1. Gambling Harm

Gambling systems are typically designed to ensure long-term profitability for the house, while players are systematically placed at a disadvantage [16]. The process activates the brain's reward system, releasing dopamine, which reinforces the thrill of winning and fuels impulsive behavior and loss-chasing, ultimately leading to a loss of control [2]. Gambling harm has been recognized as a significant global issue due to its widespread prevalence [17], with approximately 5.5% of women and 11.9% of men worldwide experiencing some level of harm [18].

Gambling harms can be categorized into the following six key areas: **1) Financial constraints:** Gambling-related financial losses often severely limit individuals' ability to access professional help, leading many to rely on free or low-threshold support services such as helplines [19]. **2) Marginalization from stigmatization:** Negative social perceptions of gambling can discourage individuals from disclosing their behavior or seeking help in digital spaces due to the fear of judgment or social exclusion [16], [20]. **3) Legal and regulatory risks:** In jurisdictions where gambling is illegal or heavily regulated, individuals may avoid seeking assistance due to concerns about legal consequences or exposure [21]. **4) Mental and physical health problems:** Gambling can lead to psychological issues such as anxiety and depression, along with physical problems like sleep disruption and self-harm [22]. **5) Disruption of relationships:** Problem gambling often damages intimate and familial relationships, leading to conflict, emotional distance, or even domestic violence [1], [23]. **6) Harms to social stability:** Widespread gambling can contribute to social instability through increased debt, crime, and the involvement of youth in gambling [24].

Despite these harms, the help-seeking rates among individuals affected by gambling harm remain low, with fewer than 10% of individuals seeking professional support owing to public stigma [2] Therefore, they often seek help only when the harm to themselves is substantial [25]. Helplines, due to their accessibility and anonymity, have become an important channel for help-seeking among individuals affected by gambling harm [26].

2.2. Gambling Helpline and Intervention Process

Given the widespread nature of gambling harm, over 80 regions worldwide have established gambling helplines to support individuals affected by gambling [26]. These helpline models can be broadly categorized into two types based on their service roles and delivery structures [12].

(1)Referral-focused helplines: Primarily serve as access points, guiding users to external treatment services. These helplines typically offer brief support, information, and referrals, without delivering in-depth therapeutic interventions. Communication channels often include telephone hotlines, SMS, online chat, and email. This model is common in regions such as the US and Canada (North America) [12], Sweden, the UK, and Finland (Europe) [27], [28], and South Korea (Asia) [29].

(2)Intervention-integrated helplines: Provide not only initial support and referral but also deliver direct interventions. These helplines typically use multi-channel communication and may incorporate in-person counseling as part of a hybrid care model. This approach is found in Australia and New Zealand (Oceania) [12] and in Singapore and Hong Kong (Asia) [12], [30].

However, many countries and regions with significant gambling harm issues lack dedicated gambling helplines. In such areas, individuals affected by gambling harm often rely on general crisis helplines for support, as seen in mainland China, Laos, and the Philippines in Asia-Pacific [31], [32].

The **intervention process** in gambling helpline services is depicted in Figure 1. The process begins when a help-seeker initiates **access** to the helpline via phone or social media. The service provider then conducts an initial **diagnostic** session to gather relevant information and alleviate immediate emotional distress, following DSM-5 (the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition) standards to assess the severity of the gambling harm [33]. This is followed by **counseling** sessions, which focus on two core objectives: addressing help-seekers' cognitive distortions about gambling and collaboratively developing personalized problem-solving strategies. The counseling process follows a structured approach based on Cognitive Behavioral Therapy (CBT) and Motivational Interviewing (MI) [6], [7], [8]. If the help-seeker agrees to ongoing support, the provider collects contact details, creates a case file, and conducts **follow-up** sessions—typically over a three-month period via helpline communication channels—to monitor progress, reassess needs, and provide continued counseling as necessary. Cases are formally closed when the help-seeker demonstrates sustained improvement.

3. Related Work

In this section, we first review prior research on digital privacy, security, and safety issues in the context of gambling, highlighting the gap in studies from the perspective of helpline service providers. We then explore research on digital tools supporting vulnerable users, emphasizing the importance of including individuals affected by gambling harm in this broader discourse.

3.1. Digital Privacy, Security and Safety Issues in Gambling

Gambling is defined as the act of staking something of value, such as money, on the outcome of an uncertain event [1]. Prior research on digital privacy, security, and safety issues in gambling can generally be categorized into two areas: 1) digital privacy and security issues in online gambling; and 2) the role of digital technologies in enhancing gambling safety.

Studies on digital privacy and security primarily focus on online gambling. As for digital privacy issues, previous research highlights a tension between user privacy and regulatory oversight in online gambling. While privacy and anonymity attract users to online gambling services [34], [35], these protections can hinder efforts to prevent underage gambling and illicit financial activities [36], [37] As for digital security issues, research has examined risks such as hacking attacks on electronic gambling machines, fraud, scams, and broader threats to gambling websites [38]. Some studies have proposed technical solutions, including secure system designs, to mitigate gambling fraud and manipulation [39].

Research on digital safety in gambling primarily focuses on mitigating gambling harm through digital tools, including prevention via the design optimization of electronic gambling machines and intervention through additional support digital channels, such as helplines. Prevention strategies implemented through electronic gambling machines primarily focus on optimizing interactive features to reduce the likelihood of irrational gambling behaviors, thus preventing severe harm from gambling [17], [25], [40], as introduced in Section 2.1. These strategies include static warning labels [41], [42], personalized pop-up messages [43], and mandatory play breaks [44], [45], [46], [47]. Intervention research has identified helpline services as a primary delivery model, valued for their accessibility and anonymity [5]. Existing studies on gambling helplines have largely focused on the characteristics and motivations of help-seekers in different regions [22], [48], [49], as well as the operational aspects of helpline services [50], including efforts to develop standardized data collection practices for gambling helplines [51]. Research consistently demonstrates that professional support from helplines is crucial for individuals experiencing gambling problems [3], [52]. For example, brief and intensive telephone interventions have been shown to help problem gamblers reduce both the frequency and amount of their gambling [53].

Prior research has highlighted the importance of gambling helplines—especially for individuals at heightened suicide risk who require strong privacy protection [20], [54]—but has also noted that helpline interventions are often less effective than face-to-face services [55]. Much of the existing work has focused on understanding help-seekers' motivations [48], [49] or evaluating help-seekers'

satisfaction with helpline models [56]. While a few studies have explored service providers' views, they have primarily examined the general challenges of gambling addiction counseling [57], leaving the usability of helplines as a delivery mechanism largely unexplored from the provider perspective. This study fills this gap by examining the perspectives of gambling helpline service providers, focusing on their perceptions of helpline usability and the challenges they face in practice.

3.2. Digital Technology in Supporting Vulnerable Users

Given that individuals affected by gambling harm often face elevated risks, such as financial instability, social stigma, and mental health challenges [4], we reviewed prior research on vulnerable populations. Previous studies have identified vulnerable users as those at risk for various reasons—physical, cognitive, emotional, or social [58]. This body of research has systematically examined the contextual factors contributing to the risk status of vulnerable individuals and explored how digital technologies can be leveraged to support them.

Contextual risk factors for vulnerable users found by previous studies are most across three levels: societal, relational, and individual. At the societal level, vulnerable users may face legal vulnerabilities, such as refugees [59]; social stigma, such as LGBTQ+ individuals [60]; or heightened social expectations, such as women in South Asian communities [61]. At the relational level, vulnerable users may hold disadvantaged positions in power-imbalanced relationships, such as survivors of intimate partner violence (IPV) [62], [63], [64], [65]; rely heavily on third parties for support, such as children and elders [66], [67]; or maintain close relationships with other vulnerable groups, such as journalists and elementary school teachers [68]. At the individual level, risk factors may include high public visibility [69], underserved unmet accessibility needs [70], limited access to resources due to economic constraints [71], or privileged access to sensitive information [72].

Prior research has explored how vulnerable users leverage digital technologies for protection and how to design technologies that support them. vulnerable users' self-protection strategies are primarily expressed through reducing identity exposure to protect their privacy, based on their knowledge and experience [73]. These strategies include using multiple accounts, controlling privacy settings, and employing stronger authentication methods [74]. Seeking external help is also a key protective strategy [75]. Informal help from trusted family and peers is particularly relevant for individuals in highly dependent relationships, such as children and teachers [76], [77]. Formal help from trusted organizations is commonly observed among survivors of IPV and refugee populations [78], [79], [80], [81]. Additionally, prior studies have explored ways to support vulnerable users. For instance, Naman Gupta and colleagues examined navigating traumatic stress reactions during computer security interventions for IPV survivors [82], while Bellini and colleagues focused on how researchers studying vulnerable users can reduce the risk of harm [83]. Other research has highlighted the digital support needs of caregivers of individuals with serious mental illness [84], [85], [86], [87], communities that may experience high rates of trauma [88], and educational interventions aimed at centering marginalized and vulnerable populations in the context of threat modeling [89].

While prior research has emphasized the importance of privacy and security for vulnerable users, helplines play a crucial role as a digital support channel for individuals in sensitive and vulnerable situations [79], [90], [91]. However, less attention has been paid to improving helpline services themselves as a means of better supporting these populations. In the context of gambling helplines, help-seekers often share risk factors with vulnerable users, including experiences of stigma and emotional distress [20]. Examining these services from the perspective of service providers not only deepens our understanding of how to support individuals affected by gambling harm but also provides design implications for enhancing helpline models targeted at broader vulnerable populations.

4. Method

In this section, we outline the methodology of our study, which was conducted through semi-structured interviews. Ethical considerations were prioritized throughout the research process. The study was approved by the Institutional Review Board (IRB) at [institution name hidden for review] and adhered strictly to IRB guidelines to ensure ethical conduct. Our research team brings substantial expertise to this topic: one member has extensive experience supporting individuals affected by gambling harm, while others have a strong research background in usable security.

We selected Macao's gambling helpline services as the focus of our study, as Macao is the largest legal gambling jurisdiction in Asia and one of the largest globally [92], with a well-established helpline system. Fourteen institutions in the region provide direct intervention services [13]. The Macao helpline system is diverse, offering 24/7 gambling-specific helplines, general crisis lines, and services tailored for specific groups, such as gambling industry workers, youth, and individuals from different religious backgrounds. These services combine multi-channel communication (phone, online chat, social media) with in-person counseling, with approximately 90% of help-seeking contacts made via phone or social media [49]. In terms of demographics, the majority of helpline users are from Macao (60%), with the remainder primarily from mainland China and Hong Kong [49]. We believe that conducting this research in Macao provides a valuable context for studying practical interventions.

4.1. Participant Recruitment

To recruit service providers from local gambling helpline organizations in Macao, we contacted the official department responsible for gambling harm interventions through our

team's connections. Additionally, we reached out to the 14 organizations listed in the official directory via email to request interviews. To ensure participants could provide reflective insights into the strengths and limitations of the service model, we asked organizations to recommend experienced service providers. Ultimately, we recruited 13 service providers from 5 organizations. Interviews were conducted between January and May 2025, either via Skype or in person. Each interview lasted 60 to 90 minutes, and participation was voluntary. All participants were informed about the study's procedures and data protection policies.

Due to the small number of helpline service providers in Macao, disclosing detailed demographic information for each participant could risk identification. Therefore, in accordance with participants' requests, we did not include individual-level demographic tables but present aggregated demographic statistics instead. Specifically, nine participants are male and four are female. Three participants hold a master's degree, and ten hold a bachelor's degree. The participants represent five institutions, with three in managerial positions. Regarding work experience, the minimum is 5 years, the maximum is 14 years, with an average of approximately 9 years. Regarding institutional differences, Institution A is a 24-hour general crisis helpline; Institution B specializes in gambling counseling and operates 24 hours; Institution C is the official government support organization for individuals affected by gambling harm; Institution D supports professionals in the gambling industry who experience gambling harm; and Institution E focuses on mental health services for Macao youth. Detailed demographic statistics are provided in Table 1.

We acknowledge the small sample size of our study; however, we argue that it provides unique and valuable insights by capturing the perspectives of a rare and underrepresented group: experienced helpline service providers. These providers are inherently scarce resources—Macao's small population base [93] and the high turnover rate in the counseling field [94] contribute to this scarcity, despite the region's relatively extensive network of gambling harm intervention services. Additionally, prior studies investigating the perspectives of experienced digital mental health support providers have used similarly small samples, typically involving 11 or 12 participants [86], [90], consistent with our sample size. Thus, despite the small sample, the study's focused scope and in-depth interviews provide sufficient support for its conclusions.

TABLE 1: Participants' demographic statistics.

Gender		Age	
Male	9	Below 30	3
Female	4	31–35	6
Education		Above 35	4
Bachelor's degree	10	**Institution**	
Master's degree	3	Institution A	4
Working Experience		Institution B	4
5–7 years	3	Institution C	1
8–10 years	4	Institution D	2
More than 10 years	6	Institution E	2

4.2. Interview Protocol

Our interview protocol was structured into three sections, as provided in Appendix A. First, we collected participants' background information to understand the types of privacy-related data typically involved in helpline services. This included demographic details, work experience, and their institutional context, such as operational models, daily routines, and workflows for supporting individuals affected by gambling harm. We also asked participants to describe the types of information they typically gather from help-seekers during professional interventions. Sample questions included: "How do you typically provide intervention to help-seekers?" and "What kind of information do you need to know for supporting your intervention work?"

Second, we explored participants' perceptions of helpline usability (RQ1) in the context of heightened privacy sensitivity. This section aimed to understand how privacy concerns among help-seekers influence service providers' interventions. Building on the work processes identified in the first section, we asked participants to reflect on their experiences with different helpline channels. Sample questions included: "How do you feel about using different channels for intervention?" and "Do you think any particular channel is more usable for your work?" Only after discussing participants' spontaneous responses did we ask them to reflect on helpline usability based on the three dimensions identified in prior research [14]. This approach was designed to avoid steering or biasing their initial perceptions while providing a comprehensive framework for further reflection. As the interviews progressed, we probed deeper with follow-up "why" questions to explore the reasoning behind different usability perceptions.

Finally, we asked participants to discuss the challenges they faced when using helplines for psychological interventions (RQ2). We also inquired about their suggestions for improving current technological models. After participants shared their responses, we followed up with questions about specific emerging technologies highlighted in prior research [84], [90], [95], [96] to understand their views on the potential application of these technologies in intervention work.

4.3. Interview Data Analysis

All interviews were audio-recorded with the informed consent of the participants and subsequently transcribed for analysis. We conducted the thematic analysis to systematically interpret the data [97]. Initially, 20% of the interview data was independently coded by two researchers. Each researcher conducted a preliminary thematic analysis to identify themes related to the research question. This process involved an in-depth reading of the transcripts, followed by the identification and labeling of relevant segments discussing the perception of usability and challenges from helpline service providers. After the initial coding phase, the two researchers compared their themes, identifying similarities and differences in interpretation. Through iterative dis-
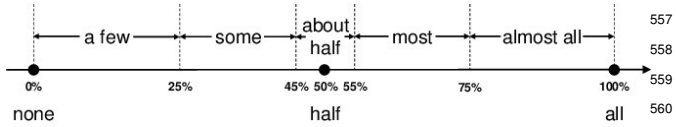
Figure 2: The terminology we use to report the percentage of participants in Section 5 and 6.

cussion, they developed a comprehensive codebook to guide the analysis of their usability perception and challenges during the helpline intervention for individuals suffering from gambling harm. To ensure the reliability of the codebook, an additional 10% of the interview data was randomly selected for coding. Both researchers independently applied the codebook to this subset, and inter-coder reliability was assessed using Cohen's Kappa [98]. The resulting Kappa value of 0.87 indicated strong agreement and confirmed the consistency of the coding framework. The remaining 70% of the interview data was then coded collaboratively by the two researchers using the validated codebook. Throughout this process, they regularly discussed findings, addressed discrepancies, and refined the analysis to ensure a rigorous and reliable thematic coding. The final codebook is provided in Appendix B. To validate the comprehensiveness of our data, a saturation analysis was conducted. Emerging themes were cataloged in the order of appearance from participants P1 through P13. Data saturation was reached after the 11th interview, with two additional interviews conducted to confirm and consolidate this saturation. The absence of novel themes in the later interviews confirmed that we had achieved data saturation.

Given the qualitative nature of the study, we refrained from reporting the exact number of participants when presenting the frequency of participants' responses; instead, we adopted a consistent terminology (similar to prior work [99], [100]) to present the relative sense of such frequency, as illustrated in Figure 2.

4.4. Limitations

Our study has two principal limitations: a constrained sample size and the regional homogeneity of participants. First, as a qualitative study with a small sample—comprising primarily experienced service providers and relying on self-reported data—this work does not support statistical generalization to the broader population of helpline providers. While such limitations are inherent to qualitative research, the in-depth accounts offer valuable, context-rich insights into counseling practices. We sought to mitigate potential bias by recruiting participants from multiple institutions and triangulating perspectives. Nevertheless, the themes and patterns identified in this study should be considered preliminary insights, providing a foundation for future research.

Second, we acknowledge the regional homogeneity of our study, as it focuses exclusively on Macao. However, Macao was chosen due to its comprehensive helpline services, which offer a more extensive intervention process

compared to regions where helplines primarily serve as referral services. Additionally, as the largest gambling hub in Asia—and one of the largest globally—Macao provides a unique context for studying gambling harm interventions. We believe the insights from participants are highly relevant. We also discuss the influence of cultural factors, enriching our understanding of usable security and privacy, which has largely been overlooked in WEIRD (Western, Educated, Industrialized, Rich, and Democratic) contexts [101].

5. Service Providers' Perceptions of Usability in Supporting Privacy-Sensitive Individuals via Anonymous Gambling Helplines

In this section, we examine helpline service providers' perceptions of the usability of anonymous gambling helpline systems (RQ1), focusing on how these systems support the provision of assistance to privacy-sensitive individuals seeking help. Specifically, we explore whether systems that emphasize privacy protection are perceived as facilitating or hindering the delivery of psychological interventions during helpline interactions. Our findings are structured around the three commonly used dimensions in usability research: effectiveness, efficiency, and satisfaction [14].

5.1. Perception of Effectiveness of Helpline

Effectiveness is defined as the accuracy and completeness with which users achieve specific goals [14]. In the context of anonymous gambling helplines, we examine how service providers perceive the system's ability to support accurate diagnosis and deliver a comprehensive intervention process.

We identified three major findings from service providers' perspectives, two of which relate directly to privacy and security tensions, and one pertaining to broader concerns around digital safety and usability: 1) Service providers noted significant limitations in the helpline model's ability to overcome help-seekers' confidentiality concerns arising from privacy risk. 2) Despite these constraints, providers highlighted that the helpline format allows them to access non-verbal and contextual cues that aid in assessing the emotional state and urgency of privacy-sensitive callers. 3) Beyond privacy and security-related concerns, providers expressed that existing digital tools often fail to support professional therapeutic practices, raising broader questions about the safety and efficacy of digital interventions for high-risk individuals.

5.1.1. Perceived Insufficiency in Addressing Privacy-Driven Information Withholding. All interviewees noted that the current confidentiality practices in helpline services may not fully alleviate help-seekers' privacy concerns, especially those influenced by the stigma surrounding gambling. Despite being informed about confidentiality protocols, many help-seekers remain cautious and engage in additional privacy-protective behaviors.

Despite standard confidentiality disclaimers, help-seekers often seek repeated reassurance. The standard confidentiality practice in helpline services typically involves providers informing help-seekers at the start of the call that all conversations will remain confidential and that personal information will not be shared. Most interviewees described this as a routine yet essential procedure to establish initial trust. However, some of them also noted that help-seekers often remain cautious even after these assurances, frequently asking if the recorded conversation is confidential: *"Sometimes they'll repeatedly ask if it's anonymous, if their information will be kept confidential"* (P06).

Help-seekers still adopt privacy-protective strategies by withholding or downplaying critical information. Despite assurances of confidentiality, most interviewees reported that many help-seekers deliberately withhold or minimize key details, which impedes service providers' ability to develop appropriate intervention strategies. This challenge arises because effective intervention often requires providers to negotiate with help-seekers about a detailed understanding of their lives, such as debt levels, income, and family dynamics, in order to co-construct practical and tailored solutions. As a result, incomplete or inaccurate information from help-seekers can directly undermine the effectiveness of these strategies. *"I remember one case where the gambler's partner reported much higher debts than the gambler admitted, so the repayment plan I set up for him must be completely useless"* (P13).

One-off communication strategies can also be adopted for help-seekers to enhance anonymity Some interviewees reported that some help-seekers use public phones or anonymous web-based chat tools to enhance anonymity. Providers noted that these strategies hinder their ability to establish ongoing contact, conduct follow-up assessments, and provide sustained support over time. *"Some help-seekers use public phones to make calls, so we have no way to follow up"* (P04).

These persistent privacy concerns are closely linked to the stigma surrounding gambling. All interviewees noted that gambling harm is often viewed as a personal failing, rather than being attributed to structural factors like gambling system design or life challenges. This perception fosters widespread judgment and the use of derogatory labels, depicting individuals as irresponsible and burdensome to their families. Help-seekers often internalize these societal attitudes, leading to shame, fear of judgment, and a strong desire to avoid social rejection: *"They call them 'landugui'—like losers. People don't trust gamblers; they think gambling ruins families and makes someone a burden [. . .] They're afraid of being mocked, ostracized, or excluded by their peers"* (P12).

5.1.2. Perceived Ability to Leverage Non-verbal Cues for Secure and Contextual Assessment.
Despite the limitations of helplines in supporting privacy-sensitive individuals, most interviewees emphasized that the helpline model provides valuable diagnostic information beyond the help-seeker's verbal expressions—particularly in assessing the safety and emotional state of individuals in crisis. They emphasized that voice communication, in particular, has unique advantages, conveying non-verbal signals such as vocal tone, speech coherence, background sounds, and environmental context. These cues help service providers cross-validate the help-seeker's emotional state, risk level, and surroundings, leading to more accurate assessments and timely interventions. *"When talking to a help-seeker, I pay close attention to background sounds. If I hear strong wind or ocean waves, it might mean the person is on a tall building or by the sea (not a safe place), which makes me more alert to their condition"*(P01).

This multi-cue information is especially crucial when help-seekers, influenced by stigma-related privacy concerns, downplay or conceal the severity of their problems. *"They are very concerned about being judged, and they are cautious about sharing personal feelings"*(P04). A few interviewees noted that although help-seekers may verbally deny their struggles, subtle indicators, such as hesitations or background noises, can reveal underlying distress. For instance, one provider identified a suicide risk from environmental sounds that the help-seeker did not explicitly mention: *"The help-seeker kept saying 'I am fine, I am fine,' but I heard a security guard in the background asking what he was doing on the rooftop"*(P05).

5.1.3. Perceived Inadequacy of Digital Tools in Ensuring Therapeutic Usability.
Most interviewees reported that the current digital tools integrated into helpline services fall short not only in usability, but in ensuring a safe and supportive environment for therapeutic engagement. Two key gaps were identified: a general lack of tools to support psychological interventions, and a specific absence of resources tailored to gambling-related cognitive distortions.

Most interviewees perceive current helpline systems as inadequate in supporting an effective environment for delivering professional interventions. While language-based communication remains the core of most helpline interactions, providers stressed that this mode alone fails to create the necessary therapeutic conditions for structured psychological support. This concern is especially critical given that individuals seeking help through gambling helplines are often experiencing acute crises. For example, techniques such as mindfulness involve guided exercises, structured prompts, and interactive elements to engage clients in reflection and skill-building—features that current helpline platforms lack. *"We try to guide them in using mindfulness to regulate their emotions, but it's very difficult over the phone[. . .] they often don't have the right environment to do it"*(P07).

Some interviewees perceive a gap in obtaining help seekers' reactions about body language. Providers noted that relying solely on language limits their ability to assess help-seekers' real-time emotional and physical status. In face-to-face settings, non-verbal cues like facial expressions and body language help identify risks, but these are absent in digital formats, where interactions lack visual or contextual feedback. *"When they fill out a form online, you can't tell*

how they're doing—it's just waiting [. . .] In person, I can see their reactions, like hesitation, nervousness, or avoidance" (P13).

Some interviewees perceived limitations in the helpline model's ability to effectively correct gambling-related cognitive distortions. Some interviewees pointed out a key usability gap in gambling helplines: the lack of effective tools to address help-seekers' misconceptions about gambling probabilities and the inevitability of long-term loss. They explained that concepts like the house edge, expected value, and the mathematical design of gambling systems are inherently difficult for many help-seekers to understand. Although some institutions have attempted to tackle this challenge through educational interventions, such as Excel-based demonstrations to visualize expected outcomes, providers noted that these methods still place high demands on help-seekers' logical reasoning and are not always practical or scalable. *"We mainly rely on Excel, but there are still challenges in scaling this concept or making it widely understandable[. . .] Usually it is easier to understand if they have a bachelor's degree or above"* (P11).

Most interviewees emphasized that correcting misconceptions about gambling is essential for enabling at-risk help-seekers to address their crises sustainably and safely. For individuals in acute distress, confronting gambling-related cognitive distortions is a critical step toward long-term risk reduction and recovery. As most interviewees reported that many individuals seek support due to external crises, such as debt or relationship issues, rather than understanding the inherent risks of gambling. As a result, many still believe gambling can lead to a big win, resolving their immediate issues. Providers worry that failing to address these cognitive distortions will lead to disengagement, undermining long-term intervention efforts. *"Some people refused to continue because they don't think gambling brings harm to them [. . .] Many still hold onto the fantasy of winning it all back to solve the crises they faced"* (P13).

5.2. Perception of Efficiency of Helpline

Efficiency refers to the resources, such as time and effort, used to achieve a task [14]. This study focuses on service providers' perceptions of efficiency in using the current digital infrastructure, rather than evaluating the long-term outcomes or clinical effectiveness of interventions, which are beyond the scope of this work. We identified three key findings regarding how efficiency intersects with the safety and responsiveness of digital intervention environments: 1) The use of real-time communication channels is seen as essential for optimizing intervention timing, especially in high-pressure crises with privacy-sensitive individuals. 2) The ability to exchange supporting materials enhances efficiency in addressing complex issues related to gambling harm, reducing the risk of misunderstanding or mismanagement. 3) Language and cultural barriers among diverse help-seekers are perceived to increase communication costs.

5.2.1. Ensuring Safe and Timely Interventions Through Real-Time Communication . About half of the interviewees consistently perceived that real-time communication channels, such as phone calls, are best suited to meeting their needs for timely intervention to prevent help-seekers from escalating risk. Providers emphasized that timing is crucial in delivering effective interventions. They explained that real-time channels allow them to respond immediately when a help-seeker is in acute distress or facing a crisis, which is often critical in gambling harm interventions. For example, when help-seekers express thoughts of self-harm or distress through social media or other asynchronous communication methods, phone calls enable providers to intervene promptly, assess the situation, and prevent further escalation. *"Once a help-seeker expressed harmful thoughts through social media, we immediately called them back to quickly establish contact [. . .] This also allowed us to check their background sounds to confirm whether they were in a safe environment"* (P13).

Some interviewees emphasized that establishing prompt contact is especially important in gambling harm interventions due to help-seekers' strong concerns about privacy. Many individuals avoid face-to-face services out of fear of being recognized in public, which could lead to unwanted disclosure of their gambling-related struggles. *"Many people are unwilling to come to our center for in-person sessions because they're afraid of being seen by acquaintances"* (P03). At the same time, all interviewees stressed that gambling harm often involves complex, overlapping issues—including overwhelming debt, fractured relationships, and unemployment as mentioned in Section 2—that can lead to acute emotional distress and heightened suicide risk. *"Some people have a strong sense of hopelessness, feeling that their life is already ruined because of gambling"* (P05). Thus, the significance of right timing lies not only in responding quickly, but also in being available precisely when help-seekers are at heightened risk—to prevent further deterioration of their situation during moments of acute vulnerability.

5.2.2. Exchange of Supporting Materials for Addressing Complex Issues . Some interviewees perceived that the ability to exchange detailed original financial materials, such as income proof, loan contracts, or financial statements, greatly enhances communication efficiency in gambling harm interventions. They noted that many help-seekers struggle to articulate their financial issues due to limited financial literacy or emotional distress. Sharing these materials allows providers to quickly assess the situation, reducing the time and effort needed to understand the problem and develop an appropriate solution. *"Sometimes they can't explain clearly what kind of debt they have, but if they send us a document or screenshot, we can quickly understand and help them"* (P03).

This need for detailed material exchange is particularly important in the context of gambling harm, as it also contributes to safeguarding the psychological security of help-seekers. Some interviewees reported that, beyond overwhelming debts, many help-seekers face complex legal risks and threats to personal safety—such as involvement with illegal lending practices and violent debt collection. In such high-risk situations, the ability to communicate promptly and assess the circumstances accurately becomes essential. *"They also come to us seeking legal support, because they are facing violent debt collection[...] and some ask basic questions like what counts as a high-interest loan"* (P03).

The use of detailed financial and intervention records is also seen as a key facilitator of continuity and efficient handover between staff members in helpline services. All interviewees explained that helpline services often involve multiple staff members working in shifts or handling different cases. Therefore, having access to previous records allows new providers to quickly understand the help-seeker's personal background and prior interactions. Without such records, providers would need to ask repetitive questions, which not only wastes time but also risks frustrating the help-seeker. *"Online communication records are the most convenient; they allow me to quickly review the information the help-seeker has previously shared"* (P08).

5.2.3. Increase in Communication Costs Due to Language and Cultural Barriers.
Some interviewees perceived that language and cultural barriers can increase the time and effort required to achieve mutual understanding in gambling harm interventions. They explained that many help-seekers communicate in regional dialects, use colloquial expressions, or speak with strong accents, which often lead to misunderstandings and require additional clarification. *"Sometimes the help-seeker has a strong accent, and if I can't understand them, they might think I'm not taking them seriously"*(P04).

Cultural differences can hinder service providers' ability to fully understand help-seekers' situations and emotional states. Regional dialects, local cultural references, and divergent social norms can create substantial barriers to effective communication. A few interviewees emphasized that even when help-seekers come from geographically nearby areas, meaningful cultural differences may persist. These differences often require providers to invest additional time and effort to bridge understanding gaps and avoid misinterpretation. *"Cultural differences are significant, even across nearby regions[...] I sometimes need to research local context or recent events to understand a help-seeker's situation"*(P05).

Regional differences also shape help-seekers' privacy and safety concerns. Participants noted that help-seekers from mainland China often face excessive debt due to the prevalence of low-threshold online lending services, which allow individuals to borrow amounts far beyond their income capacity. In contrast, help-seekers from regions like Hong Kong were more likely to express concerns about personal safety due to the threat of violent debt collection practices.

"Online lending is more widespread in mainland China, so it's easier for people to borrow too much money. In Hong Kong, more help-seekers worry about violent debt collection"(P03).

5.3. Perception of Satisfaction of Helpline

Satisfaction refers to users' comfort with and positive attitudes toward using a system [14]. For gambling helpline providers, their satisfaction primarily focuses on the subjective comfort of communication with help-seekers. We identified two key perceptions: 1) different communication modes have their advantages in supporting privacy-sensitive help-seekers through comfortable conversations; and 2) real-time communication is often perceived as mentally draining and more demanding to manage.

5.3.1. Supporting Trust and Comfort with Privacy-Sensitive Individuals Through Flexible Communication Modes.
All interviewees emphasized that communication modes should support the development of trust with help-seekers, particularly those who are highly sensitive to stigma or social exposure. While they expressed different preferences for the available communication channels, they generally agreed that the current modes allow them to find at least one channel that enables comfortable interaction.

Most interviewees preferred voice calls for their capacity to create a sense of realism. This was seen as vital for building credibility with help-seekers who may hesitate to open up. Variations in tone, pacing, and vocal presence were used intentionally to convey empathy and establish a calming, safe environment. *"Some people question whether I'm a robot[...] Through phone calls, I can prove I'm real[...] I make my voice softer and gentler during conversations, which helps soothe certain help-seekers"* (P05).

Others highlighted the value of text-based communication in situations involving passive or withdrawn individuals. Some interviewees noted that visual elements such as emojis helped reduce tension and restore emotional connection when communication broke down. *"When the help-seeker stops replying, I like to use emojis to break the awkward silence"* (P02).

5.3.2. Exacerbation of Mental Fatigue in Real-Time Communication.
While real-time communication is valued for its immediacy, some interviewees expressed concern that it imposes substantial cognitive demands that may compromise their psychological safety and intervention quality. They noted that phone calls and other synchronous modes require sustained, high-effort multitasking—listening, interpreting, regulating the help-seeker's emotions, and responding in real time—all without sufficient space to pause, reflect, or seek information. *"All of my energy is spent calming the person down, so I barely have the capacity to search for things I don't understand"*(P08). This multitasking environment limits their ability to take notes, reflect on complex issues, or search for additional information when needed.

"I can only rely on memory. If I try to write things down, I lose focus and fall behind the help-seeker's pace"(P02).

6. Challenge in Gambling Intervention

In this section, we present the challenges that service providers perceive as individuals engaged in delivering support for users with gambling harms (RQ2). These challenges reflect the service providers' lived experiences within helpline settings, beyond the usability of specific systems.

Our analysis reveals three key findings. First, at the individual level, providers express concerns about balancing personal privacy with effective intervention. Second, at the organizational level, they point to insufficient training and support for addressing help-seekers' complex needs. Third, at the technological level, they view emerging tools with ambivalence, acknowledging their potential but also raising ethical and practical concerns.

6.1. Individual-Level Challenge

Beyond the help-seekers' privacy concerns discussed earlier, our study reveals that service providers themselves also hold privacy concerns. They face a challenge in balancing their privacy protection with the effectiveness of interventions.

Service providers' privacy concerns stem from the risk of emotional dependency and boundary-crossing behavior. Most interviewees reported that the emotional support and empathetic listening provided by helpline staff can sometimes lead help-seekers to develop emotional dependency or even admiration toward providers. This risk is particularly notable because individuals affected by gambling harm often feel misunderstood and lack emotional outlets in their daily lives. *"Emotional dependency is very common, especially because many of them feel ignored in their everyday lives"* (P13). In some cases, this dependency may escalate into boundary-crossing behavior, where help-seekers attempt to contact providers outside the helpline, posing privacy and safety risks, such as sending unsolicited messages, attempting to meet in person. For instance, one participant shared a case where a help-seeker used the provider's name to search for and locate their personal social media account: *"Someone once learned my name and later found my Instagram account through social media searches"* (P04).

Service providers are also concerned that simple anonymity measures may hinder intervention work. This concern is particularly relevant when supporting privacy-sensitive help-seekers, who may already exhibit heightened defensiveness and suspicion, as discussed in Section 5.1.1. A few interviewees felt that using a staff ID alone can appear overly formal, hindering rapport-building. On the other hand, using a pseudonym raised concerns about the risk of accidental exposure, which could damage the credibility of the provider and the trust of the help-seeker. *"In building relationships with clients, sincerity matters. A staff ID feels too cold[. . .] But if I use a fake name—say I tell the client I'm Mr. Wang, and then a colleague accidentally calls me Mr. Li in front of them—they might think I'm lying"* (P07).

6.2. Organizational-Level Challenge

In addition to individual challenges, we also identified organizational gaps in training and professional development that affect both the short-term emotional resilience and long-term skill growth of service providers.

Frequent relapse contributes to emotional strain and diminishes providers' confidence. Relapse is common in gambling harm recovery, often requiring repeated interventions over extended periods. While experienced providers generally accept relapse as part of the process, newcomers often find it demoralizing. All interviewees noted that early-career practitioners may internalize these outcomes as personal failure, leading to emotional exhaustion and questioning the value of their work: *"New colleagues often experience psychological pressure, feeling responsible for relapses and questioning their effectiveness, sometimes leading them to consider leaving the profession"*(P04). Currently, approaches to managing these emotional challenges are largely informal. Most of our participants, who are experienced professionals, indicate that they rely on personal coping strategies or peer discussions to process negative emotions. *"Some people struggle with feelings of failure and can't move on[. . .] As senior counselors, we offer support, but it's ultimately up to the individual"*(P07).

The lack of culturally relevant training hinders the development of essential skills for service providers. Some interviewees noted that a key challenge in developing intervention skills is the lack of culturally adapted, structured training systems. While many providers had general psychological education, they found that existing intervention models—mainly developed in Western contexts—often assume norms like open emotional expression, which do not align with local cultural practices: *"In Western models, people express emotions more easily, and the intervention model is built on that mode[. . .] But here, you first have to guide them to talk about their feelings"* (P09).

Beyond these cultural mismatches, there is a lack of institutional resources to support gambling-specific skill development. Some interviewees noted a lack of institutional resources for gambling-specific skill development, such as case databases or tailored learning materials. With few training institutions offering ongoing development, new providers often rely on real-world experience, leading to a trial-and-error process that is both demanding and inconsistent. Several participants also highlighted the financial burden of pursuing education independently. *"If you want to work in this field long-term, you have to keep learning. Many people can't save money because they're constantly paying for courses to figure out what method works best for them"* (P05).

It is worth noting that, at times, privacy protection measures designed for help-seekers may also create challenges for service providers. For example, in our sample, Institution A operates Macao's only 24-hour general

crisis helpline and, unlike other services, does not record calls. This policy is based on the legal requirement that all recordings must be disclosed to the caller in advance. As a general crisis helpline, interviewees explained that callers often contact the service in highly urgent or life-threatening situations, where any delay—such as playing a consent notice—could have severe consequences. *"Some callers are already preparing to take their own lives. If they have to first listen to a recording disclosure, they might lose patience and jump"* (P02).

However, a few interviewees also reported that this no-recording policy can create difficulties in situations where providers are subjected to irrational or abusive behavior. Without recorded evidence, service providers lack documentation to protect themselves. *"Some people call just to launch personal attacks [. . .] And sometime even they turn around and file a complaint against you [. . .] you have no proof"* (P02).

6.3. Technology-Level Challenge

We examined the ethical and practical concerns service providers expressed regarding the use of emerging technologies in interventions for individuals experiencing gambling harm. Two major themes emerged: 1) heightened concerns about privacy and data use, and 2) uncertainty around the safety and accountability of automated systems. Despite these concerns, providers showed cautious optimism about the potential benefits of digital tools in reducing workload and improving support delivery.

Privacy protection remains a central concern in digital interventions. Due to the stigma surrounding gambling, help-seekers highly value anonymity when accessing support. All interviewees reported that even the possibility of data collection, whether for training, research, or system development, could significantly disrupt help-seekers' willingness to share openly. *"If you tell them the conversation is being recorded, they might start to monitor their own speech and behavior. That could interfere with the intervention"* (P11).

Service providers' privacy concerns also warrant attention. Most participants indicated a preference for face-to-face interventions because such formats allow them to access rich non-verbal cues, such as facial expressions and body language, that facilitate deeper understanding compared to the current helpline model. However, when asked why video-based interventions were not adopted, a few expressed concerns about potential privacy risks, particularly the fear of being recorded and the possibility of such recordings being leaked or misused. *"With video, you always worry that someone might record the session and use it maliciously, like editing clips out of context. That's really risky and dangerous"*(P07).

Furthermore, some interviewees admitted limited understanding of technical safeguards such as anonymization or encryption, which heightened their discomfort with digital tools and increased concern about possible data leaks: *"I don't really understand the technology, so I don't know what the risks are. If there's a privacy leak, it would be a serious issue"* (P08).

Concerns about accountability and safety in automated decision-making. While most providers recognized the potential of automation for improving efficiency, a few interviewees expressed caution about applying these systems in high-stakes contexts such as suicide risk assessment. They worried that when automated outputs conflict with professional judgment, responsibility becomes ambiguous. Given the complexity and sensitivity of gambling-related crises, providers feared that over-reliance on automation could compromise human expertise and accountability. *"I know there can be false positives or false negatives—so whose judgment should take priority? If something goes wrong, who is responsible?"* (P09).

Digital tools are still seen as promising if ethical risks are addressed. Despite these reservations, most interviewees recognized the potential of digital tools to reduce cognitive burden and streamline service delivery. They welcome tools that could assist with a range of tasks, including voice transcription, information retrieval, record keeping, and preliminary assessment. Some participants even express anticipation for the future development of automated diagnostic chatbots: *"I actually think the emergence of automated diagnostic chatbots could be a good thing—they might meet the needs of those who strongly prefer anonymous communication"* (P10).

7. Discussion

Building on our findings regarding service providers' perceptions of gambling helpline usability and the challenges involved in supporting privacy-sensitive individuals, this section begins by examining the inherent tension between privacy protection and intervention effectiveness in supporting privacy-sensitive individuals' helplines. We then explore broader systemic and contextual challenges faced by digital platforms in delivering care for vulnerable populations. Finally, we present a set of design implications to address these issues, organized from a system architecture perspective of the helpline.

7.1. The Tension Between Privacy and Intervention Effectiveness in Online Gambling Help-Seeking

To further investigate the tension between privacy protection and intervention effectiveness in online gambling helplines, we present a comparative analysis between help-seekers' needs, as identified in prior research, and service providers' needs, as revealed in our study, across four related tension during the intervention process, as shown in Table 2.

7.1.1. Initial Access: Anonymity vs. Traceability. Tension between help-seekers' desire to remain anonymous and service providers' need to identify users for effective case management. Help-seekers often fear stigma, legal consequences, or social judgment, which leads them to prioritize anonymity and choose low-barrier [102], anonymous

TABLE 2: Comparison of Help-Seekers' and Service Providers' Needs Across Intervention Stages in Gambling Helpline Services. The table summarizes the major needs of help-seekers and service providers across four stages of intervention, as identified in Section 5, highlights the key tensions between privacy protection and intervention effectiveness, and outlines functional needs that inform the design implications discussed in Section 7.3 for developing more usable digital gambling helpline systems.

Stage	Help-Seekers' Needs	Service Providers' Needs	Tension	Functional Needs
Access	Remain anonymous Avoid being identified	Identify help-seekers Document for follow-up and continuity of care	Anonymity and privacy needs vs. Identification for continuity and accountability	Privacy-preserving identification Secure record-keeping
Diagnosis	Express negative emotions	Detect crisis severity quickly and accurately Fully understand emotional cues Emotional support	Emotional intensity vs. Clarity and reliability of information	Linguistic/cultural mediation Emotion comforting
Counseling	Ask for help with external issues Selectively disclose due to shame	Obtain accurate personal info Provide structured, personalized care	Shame and selective disclosure vs. Need for open, actionable insight	Supportive disclosure environments Structured care pathways
Follow-Up	Prefer to solve problems independently Unaware or denying gambling as a serious issue	Build connection to monitor relapse Correct gambling misconceptions	Desire for autonomy and avoidance vs. Need for ongoing engagement and cognitive change	Low-barrier re-engagement channels Educational tools to correct misconceptions

channels such as web-based chats or public phone calls as described in Section 5.1.1. In contrast, service providers need to identify users and collect basic personal information to document cases, coordinate follow-up, and ensure continuity of care, as discussed in Section 5.2.2. As a result, the help-seekers' efforts to avoid identification may conflict with providers' operational need for user traceability and accountability.

7.1.2. Information Exchange: Emotional Urgency vs. Interpretive Clarity. Tension between help-seekers' emotionally urgent expressions and service providers' need for clear information to assess crisis risk effectively. During the information exchange and assessment stage, help-seekers often reach out while experiencing acute emotional distress, such as anxiety, agitation, suicidal ideation, or a profound sense of hopelessness, which prompts them to communicate with urgency and emotional intensity [103]. In contrast, service providers must rapidly assess the severity of risk and respond appropriately, relying heavily on the clarity and accuracy of these emotional cues, as discussed in Section 5.1.2 and Section 5.2.1. At the same time, they are expected to offer smooth conversation for emotional support to help stabilize the help-seeker, as noted in Section 5.3.1. Moreover, providers aim to fully understand help-seekers' needs in real time, and this process can be disrupted by language barriers or cultural differences that hinder interpretation, as discussed in Section 5.2.3. As a result, although the emotional expressions reflect genuine need and often align with providers' goals for rapid intervention, they may also compromise the clarity, precision, and cultural readability required for timely and accurate crisis assessment.

7.1.3. Intervention Delivery: Selective Disclosure vs. Therapeutic Transparency. Tension between help-seekers' shame-driven selective disclosure and service providers' need for comprehensive information to deliver personalized and effective care. At the intervention delivery stage, help-seekers typically seek relief from immediate problems such as overwhelming debt, strained relationships, or compulsive gambling behavior [2]. However, these concerns are often accompanied by a strong sense of shame, which leads to selective disclosure or even intentional withholding of sensitive information, as discussed in Section 5.1.1. In contrast, service providers require detailed and accurate information to tailor interventions across multiple domains: managing debt requires precise financial data, as discussed in Section 5.2.2; resolving interpersonal conflicts depends on understanding family and social context, as discussed in Section 5.1.1; and supporting behavioral recovery involves applying evidence-based strategies like emotional regulation and impulse control, as discussed in Section 5.1.3. This mismatch between emotionally filtered self-presentation and the provider's need for full, actionable insight creates a tension that undermines the precision, relevance, and effectiveness of the care delivered.

7.1.4. Follow-Up: Autonomy vs. Sustained Engagement. Tension between help-seekers' pursuit of autonomy and denial of risk, and providers' need for sustained engagement and corrective intervention. In the follow-up stage, many help-seekers disengage after the initial crisis subsides, citing a desire to solve the problem themselves and avoid further stigma or identity exposure [52], [104]. This often leads to extended one-off sessions, where users feel the need to fully express themselves in a single interaction [49]. Additionally, some maintain cognitive distortions about gambling, such as believing it remains a viable solution to their financial or relationship issues [21], which reduces their motivation to engage in sustained care. In contrast, service providers emphasize the importance of sustained engagement not only for monitoring and relapse prevention, but also for correcting distorted beliefs, as noted in Section 5.1.3. They also seek to solve the fatigue and reduced intervention efficacy caused by prolonged one-off interactions, as noted in Section 5.3.2. These opposing orientations create a tension in which help-seekers' preference for minimal contact and self-directed recovery undermines providers' ability to deliver consistent, corrective, and energy-sustainable intervention over time.

7.2. The Challenges of Current Digital Channels in Supporting Gambling Interventions

Following our discussion of the tension between help-seekers' privacy concerns and service providers' need for effective intervention, this section turns to the challenge of current digital helpline systems in supporting vulnerable users. We begin by examining general challenges faced by service providers in remote support settings, using gambling helplines as a representative example. We then discuss the unique difficulties that arise specifically in the context of gambling-related interventions, as shown in Table 3.

7.2.1. Secure Data Use: Integrate digital tools without compromising user safety. The challenge lies in integrating digital tools without compromising the security of highly sensitive user data. vulnerable populations, when asking for help, often disclose highly sensitive personal information, which makes any form of data collection or storage especially risky. A breach of online records could lead to severe consequences, including social stigma, legal exposure, or personal safety threats [74]. As a result, frontline helpline staff handle data with extreme caution. However, these same data, when used responsibly, can significantly enhance service quality. As discussed in Section 6.3, existing digital tools for triage, documentation, and session tracking have the potential to reduce provider workload and improve intervention efficiency. Moreover, structured data collection can support case-based learning and skill development, offering valuable feedback for early-career providers, as noted in Section 6.2. The challenge, therefore, lies in designing systems that enable safe and consensual use of data while unlocking its value for service improvement and capacity building.

7.2.2. Provider Protection: Balance emotional openness with personal privacy. The challenge is balancing providers' emotional openness with their need for privacy and personal safety. To build trust with vulnerable help-seekers—many of whom may experience shame, fear, or social withdrawal—providers often engage in authentic, emotionally open communication, as discussed in Section 5.3.1. This sincerity reduces users' psychological defenses and promotes meaningful engagement. However, such openness can make providers vulnerable to emotional transference and over-dependence, particularly when help-seekers lack stable social support and form strong attachments to the only available support figure. These blurred relational boundaries, even when stemming from good intentions, can cause emotional strain or discomfort for the provider, such as unsolicited social media messaging or boundary-crossing behavior, as discussed in Section 6.1. In today's digital environment, misuse of voice and video recordings for cyberbullying or public shaming is not uncommon [105], further increasing providers' privacy concerns. Ultimately, the helpline system must balance being emotionally available to help-seekers in distress with protecting service providers' psychological and digital safety.

7.2.3. Cross-Boundary Support: Ensure consistency across geographic, cultural, and linguistic divides. The challenge lies in providing consistent and culturally competent support across legal, geographic, and linguistic boundaries. Gambling is often intertwined with tourism, drawing help-seekers from diverse regions who may return home after experiencing gambling harm [106]. For many, especially those in jurisdictions without a gambling support infrastructure or where gambling itself is illegal, digital helplines become the major accessible channel for care, as we introduced in Section 2. This geographic mobility introduces complex cross-jurisdictional issues, such as varying legal implications and differing privacy and safety requirements, which can significantly disrupt the efficiency of service provision, as mentioned in Section 5.2.3. These conditions demand that digital systems and service providers be equipped with the ability to communicate seamlessly across language barriers, adapt to help-seekers' cultural contexts.

7.2.4. Intervention Complexity: Support providers with real-time, domain-specific knowledge. The challenge lies in equipping providers with real-time, cross-domain expertise to address the complexity of gambling-related cases. Unlike general crisis counseling, effective gambling intervention often requires addressing issues such as debt management, financial literacy, and legal risks, as discussed in Section 5.2.2. However, current digital helpline systems rarely provide consistent, domain-specific knowledge resources for providers to rely on during sessions. Instead, frontline staff are often left to independently study, interpret, and recall complex information in real time, which increases cognitive burden and reduces intervention consistency, as discussed in Section 5.3.2. Without integrated knowledge support, providers struggle to offer the holistic, cross-domain guidance that many gambling-affected individuals urgently need.

7.3. Design Implication

Building on the challenges identified above, we derive design implications for improving gambling helplines. To organize these implications, we adopt a system architecture perspective of the helpline: we distinguish four layers—the help-seeker frontend, the service provider frontend, the backend and data governance layer, and cross-cutting provider support. This layered framing is informed by sociotechnical systems theory [107] and three-tier architecture [108].

7.3.1. Help-Seeker Frontend. Help-seekers using gambling helplines often have urgent needs and heightened concerns about privacy, as noted in Section 5. To address these concerns, we suggest enhancing the help-seeker interface by introducing a hashed alias system and providing more flexible sharing options.

Hashed Alias for Traceable Anonymity. First, using a hashed alias—and clearly informing help-seekers about it—can help balance their desire for anonymity with service

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TABLE 3: Key Challenges of Current Digital Helpline Channels in Gambling Interventions. The table outlines major difficulties faced by service providers in delivering effective gambling-related interventions through digital helplines, as identified in Section 6. It highlights four categories of challenges and summarizes the corresponding functional needs that inform the design implications discussed in Section 7.3.

Challenge	Description	Functional Needs
Secure Data Use	Sensitive user data carries a high risk if breached, yet structured data can enhance efficiency and learning.	Privacy-preserving data collection Secure record management
Provider Protection	Emotional openness builds trust but exposes providers to transference, boundary issues, or privacy threats.	Tool for protecting provider privacy
Cross-Boundary Support	Geographic mobility and cultural/linguistic diversity complicate consistent care delivery.	Multilingual communication Cultural and legal adaptation
Intervention Complexity	Gambling-related cases require financial, legal, and psychological expertise, but digital systems lack integrated resources.	Integrated knowledge database Real-time decision support

providers' need to identify users for effective case management, as discussed in Section 7.1.1. This approach can be integrated without altering existing access methods for help-seekers, as the helpline can continue to route calls based on the real phone number. However, service providers do not need to see or handle this raw identifier. Instead, the system can automatically generate a hashed alias linked to the incoming caller ID or social media handle [109]. Service providers interact only with this alias through the interface, while the raw identifiers remain hidden at the system level. Crucially, the aliasing mechanism should be clearly communicated to help-seekers at the start of the interaction. A short, standardized disclosure—such as "your real phone number is not visible to our counselors; the system replaces it with a secure alias"—can reassure users while clarifying the boundaries of anonymity. This approach likely reduces unnecessary exposure and better aligns with service providers' need for case continuity, without undermining help-seekers' perception of privacy.

Progressive Disclosure for Granular Privacy Control. Second, progressive disclosure options can help reconcile help-seekers' reluctance to share sensitive information with service providers' need for comprehensive details to deliver personalized and effective care, as noted in Section 7.1.3. These more flexible information-sharing practices can be implemented by offering help-seekers fine-grained visibility controls when submitting documents. For example, help-seekers could share time-limited, view-only links delivered through the same communication channel. Each link could be accompanied by a consent banner specifying the retention period, visibility scope, and archival status. Such mechanisms have been shown to enhance users' perceived privacy control in other contexts [110].

7.3.2. Service Provider Frontend. The service provider console should enhance counselors' ability to manage live interactions, deliver professional interventions, and protect their own privacy, as noted in Section 7.2. To meet these needs, we recommend integrating three types of tools into the service provider interface: feedback-sensitive tools to support real-time communication, customizable digital resources aligned with intervention needs, and manageable outward-facing persona generation.

Feedback-Sensitive Tools for Timely Support. First, feedback-sensitive tools can help mitigate the mental fatigue associated with real-time communication, as discussed in Section 7.2.4. These tools operate on two levels. On one hand, the system can proactively monitor interactions and display lightweight indicators derived from non-verbal cues—such as response latency, speech–silence rhythms, or background noise in the help-seeker's environment—within the interface. These subtle signals assist service providers in interpreting help-seekers' emotional states while reducing the cognitive load involved in processing verbal information. On the other hand, the interface can incorporate feedback collection mechanisms—such as dynamic questionnaires that capture latency, text edits, or hesitation patterns—to help assess help-seekers' responses during remote sessions, as outlined in Section 7.1.2.

Digital Resources Aligned with Intervention Needs. Second, aligning digital tools with providers' professional needs is essential for enhancing the effectiveness of helpline interventions, as found in Section 7.1.4. To address gambling-specific misconceptions, the system should incorporate interactive, visual teaching modules that explain key concepts such as randomness, the house edge, and cumulative loss. Immersive scenario-based simulations can help demystify the illusion of control and reinforce probabilistic thinking. In addition, self-guided emotional regulation tools—such as app-based mindfulness exercises—should be made available for help-seekers to access outside of live sessions, supporting long-term behavioral change, as highlighted in Section 5.1.3.

Customizable Persona for Provider Privacy. Third, manageable digital persona generation can help balance service providers' emotional openness with their need for privacy and personal safety, as noted in Section 7.2.2. We recommend that the service provider interface incorporate customizable digital persona features, enabling counselors to reduce the exposure of personal attributes—such as voice tone or speaking style—while still fostering a comfortable and trustworthy environment for help-seekers.

7.3.3. Backend and Data Governance Layer. The backend and data governance layer underpins both the help-seeker and service-provider frontends by managing information

flows and safeguarding sensitive data. To fulfill this role, the backend should adopt three strategies: tiered data exposure for help-seeker privacy protection, consistent case management for service providers, and desensitization in system-wide data processing.

Tiered Identifier Exposure for Privacy Protection. First, enforce tiered exposure of help-seeker identifiers. Helpline systems should limit the visibility of raw identifiers such as phone numbers or social media handles. While these identifiers are necessary for routing and deduplication, routine access by counselors should return only a stable hashed alias, thereby preserving continuity of care without overexposing sensitive information. Only a minimal set of authorized personnel should have access to raw identifiers, with all access tightly logged and monitored.

Structured Case Management for Continuity. Second, implement structured case management for continuity. The backend database should be designed to maintain longitudinal case records that link help-seeker aliases with their historical interactions. Each entry should include counselor-prepared summaries, flagged risks, and key intervention notes, enabling consistent guidance across sessions. To ensure trust, the database must also manage stable counselor personas, preventing perceptible inconsistencies when the same help-seeker interacts with the same counselor over time. Beyond passive storage, the database should support event-driven triggers: for cases marked as requiring follow-up, the system automatically generates reminders in the counselor console. All follow-up communication is routed via the backend relay, ensuring counselors never access raw identifiers while encrypted calls or messages are handled securely at the system level.

De-Identification and Localized Analytics for Privacy-Preserving AI. Third, implement de-identification and localized analytics. All data handling should follow a privacy-by-design principle. This includes end-to-end encryption, local or isolated model deployment separated from public telephony or cloud services [111], and the use of anonymized historical sessions for fine-tuning [112]. These safeguards prevent unauthorized interception or leakage when data are processed for analytical purposes. Furthermore, AI models that support frontend features—such as feedback-sensitive cues —should be trained only on anonymized and de-identified historical records, thereby improving performance without exposing sensitive content.

7.3.4. Cross-Cutting Provider Support. While technical layers ensure reliable interactional infrastructures, sustaining provider resilience requires dedicated functionalities, as noted in Section 6.2. We recommend two design directions for supporting providers beyond counseling tasks: continuous training support and post-session decompression mechanisms.

Continuous Training Support for Provider Development. First, continuous training support should be built into the system. Anonymized case records can serve as the foundation for scenario-based training modules, enabling providers to practice evidence-informed strategies in simulated settings without exposing sensitive data. This design helps early-career providers gradually build confidence and resilience, while also offering experienced counselors opportunities to refine and update their techniques.

Post-Session Reflection for Provider Resilience. Second, post-session decompression mechanisms are equally critical for maintaining provider well-being. Locally deployed AI modules can review conversation transcripts to identify missed cues, tone inconsistencies, or pacing issues, and then offer actionable feedback. Such reflective feedback not only helps counselors recognize and address blind spots in a constructive way but also contributes to sustaining long-term engagement in emotionally demanding work.

8. Conclusion

This study examined how digital helpline systems support or constrain gambling-related psychological interventions from the perspective of service providers. By focusing on the balance between privacy protection and intervention effectiveness, we identified core tensions and structural challenges that shape helpline support work. While helplines provide critical access for help-seekers, current systems often lack the tools and safeguards needed to support providers' professional and emotional needs. We conclude by proposing design directions that align with the intervention process, aiming to inform more sustainable, privacy-conscious digital support for vulnerable populations.

References

[1] E. Langham, H. Thorne, M. Browne, P. Donaldson, J. Rose, and M. Rockloff, "Understanding gambling related harm: A proposed definition, conceptual framework, and taxonomy of harms," *BMC public health*, vol. 16, pp. 1–23, 2015.

[2] M. N. Potenza, I. M. Balodis, J. Derevensky, J. E. Grant, N. M. Petry, A. Verdejo-Garcia, and S. W. Yip, "Gambling disorder," *Nature reviews Disease primers*, vol. 5, no. 1, p. 51, 2019.

[3] S. Gainsbury, N. Hing, and N. Suhonen, "Professional help-seeking for gambling problems: Awareness, barriers and motivators for treatment," *Journal of Gambling Studies*, vol. 30, pp. 503–519, 2014.

[4] L. Quigley, "Gambling disorder and stigma: Opportunities for treatment and prevention," *Current Addiction Reports*, vol. 9, no. 4, pp. 410–419, 2022.

[5] J. W. Eriksen, A. Fiskaali, R. Zachariae, K. B. Wellnitz, E. Oernboel, A. W. Stenbro, T. Marcussen, and M. W. Petersen, "Psychological intervention for gambling disorder: A systematic review and meta-analysis," *Journal of Behavioral Addictions*, vol. 12, no. 3, pp. 613–630, 2023.

[6] T. P. Oei, N. Raylu, and L. M. Casey, "Effectiveness of group and individual formats of a combined motivational interviewing and cognitive behavioral treatment program for problem gambling: A randomized controlled trial," *Behavioural and cognitive psychotherapy*, vol. 38, no. 2, pp. 233–238, 2010.

[7] M. Bellringer, K. Palmer du Preez, A. Vandal, N. S. Henry, L. Mauchline, D. Hodgins, M. Battersby, J. Landon *et al.*, *Effectiveness of face-to-face gambling interventions, two years later: final report/prepared for Ministry of Health, authors, Maria E. Bellringer, Katie Palmer Du Preez, Alain C. Vandal, Nathan Henry, Laura*

Mauchline, David C. Hodgins, Malcolm Battersby, Jason Landon (Auckland University of Technology, Gambling and Addictions Research Centre). Wellington: Ministry of Health, Manatū Hauora, 2022., 2022.

[8] M. Goslar, M. Leibetseder, H. M. Muench, S. G. Hofmann, and A. R. Laireiter, "Efficacy of face-to-face versus self-guided treatments for disordered gambling: A meta-analysis," *Journal of behavioral addictions*, vol. 6, no. 2, pp. 142–162, 2017.

[9] B. Tolchard, "Cognitive-behavior therapy for problem gambling: a critique of current treatments and proposed new unified approach," *Journal of Mental Health*, vol. 26, no. 3, pp. 283–290, 2017.

[10] B. G. Link, E. L. Struening, S. Neese-Todd, S. Asmussen, and J. C. Phelan, "Stigma as a barrier to recovery: The consequences of stigma for the self-esteem of people with mental illnesses," *Psychiatric services*, vol. 52, no. 12, pp. 1621–1626, 2001.

[11] R. Bijker, N. Booth, S. S. Merkouris, N. A. Dowling, and S. N. Rodda, "Global prevalence of help-seeking for problem gambling: a systematic review and meta-analysis," *Addiction*, vol. 117, no. 12, pp. 2972–2985, 2022.

[12] A. H. Berman, A. Arillo, A. Berntsson, and S. Rodda, "Helplines for problem gambling worldwide: What do they do and whom do they reach?" *Journal of Gambling Issues*, no. 52, pp. 1–32, 2023.

[13] Instituto de Acção Social, "O ias desenvolve serviços diversificados para a prevenção e tratamento dos distúrbios do vício do jogo," https://www.gcs.gov.mo/detail/pt/N19COeCUay, 2019, acesso em: 3 jun. 2025.

[14] E. Frøkjær, M. Hertzum, and K. Hornbæk, "Measuring usability: are effectiveness, efficiency, and satisfaction really correlated?" in *Proceedings of the SIGCHI conference on Human Factors in Computing Systems*, 2000, pp. 345–352.

[15] V. Distler, M. Fassl, H. Habib, K. Krombholz, G. Lenzini, C. Lallemand, L. F. Cranor, and V. Koenig, "A systematic literature review of empirical methods and risk representation in usable privacy and security research," *ACM Transactions on Computer-Human Interaction (TOCHI)*, vol. 28, no. 6, pp. 1–50, 2021.

[16] E. O. Ribeiro, N. H. Afonso, and P. Morgado, "Non-pharmacological treatment of gambling disorder: A systematic review of randomized controlled trials," *Bmc Psychiatry*, vol. 21, pp. 1–15, 2021.

[17] G. Reith, H. Wardle, and I. Gilmore, "Gambling harm: a global problem requiring global solutions," *The Lancet*, vol. 394, no. 10205, pp. 1212–1214, 2019.

[18] W. H. Organization, "Mental health," June 2022. [Online]. Available: https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

[19] D. C. Hodgins, J. N. Stea, and J. E. Grant, "Gambling disorders," *The Lancet*, vol. 378, no. 9806, pp. 1874–1884, 2011.

[20] N. Hing, E. Nuske, S. M. Gainsbury, and A. M. Russell, "Perceived stigma and self-stigma of problem gambling: Perspectives of people with gambling problems," *International Gambling Studies*, vol. 16, no. 1, pp. 31–48, 2016.

[21] H. Suurvali, D. C. Hodgins, and J. A. Cunningham, "Motivators for resolving or seeking help for gambling problems: A review of the empirical literature," *Journal of Gambling Studies*, vol. 26, pp. 1–33, 2010.

[22] D. M. Ledgerwood, M. A. Steinberg, R. Wu, and M. N. Potenza, "Self-reported gambling-related suicidality among gambling helpline callers." *Psychology of Addictive Behaviors*, vol. 19, no. 2, p. 175, 2005.

[23] N. Aragay, S. Jiménez-Murcia, R. Granero, F. Fernández-Aranda, I. Ramos-Grille, S. Cardona, G. Garrido, M. A. Islam, J. M. Menchón, and V. Vallès, "Pathological gambling: Understanding relapses and dropouts," *Comprehensive Psychiatry*, vol. 57, pp. 58–64, 2015.

[24] K. Dąbrowska and Ł. Wieczorek, "Perceived social stigmatisation of gambling disorders and coping with stigma," *Nordic Studies on Alcohol and Drugs*, vol. 37, no. 3, pp. 279–297, 2020.

[25] D. Forrest and I. G. McHale, "Gambling and problem gambling among young adolescents in great britain," *Journal of gambling studies*, vol. 28, pp. 607–622, 2012.

[26] G. Clifford, "The evolution of problem gambling helplines," in *In the pursuit of winning: Problem gambling theory, research and treatment*. Springer, 2008, pp. 291–312.

[27] D. Forsström, O. Molander, A. Nilsson, and H. Wall, "Demographics and help-seeking among significant others contacting the swedish gambling helpline," *Nordic Studies on Alcohol and Drugs*, vol. 42, no. 2, pp. 184–197, 2025.

[28] D. Webb, "Changes in help-seeking for gambling support in the uk pre and post covid-19," 2023.

[29] R. J. Williams, C.-K. Lee, and K. J. Back, "The prevalence and nature of gambling and problem gambling in south korea," *Social Psychiatry and Psychiatric Epidemiology*, vol. 48, pp. 821–834, 2013.

[30] P. V. N. Asharani, A. Amron, R. S. K. Ng, S. Varghese, and C. C. S. Cheok, "Utilisation patterns of helpline and web chat services among gamblers in singapore," *Singapore medical journal*, vol. 60, no. 4, p. 164, 2019.

[31] G. Zhong, J. Du, and M. Zhao, "Understanding and addressing the challenges of online gambling addiction in mainland china," *General Psychiatry*, vol. 37, no. 2, e101477, 2024.

[32] M. Das, "Fantasy sports and gambling regulation in the asia-pacific," *The International Sports Law Journal*, vol. 21, no. 3, pp. 166–179, 2021.

[33] N. M. Petry, C. Blanco, R. Stinchfield, and R. Volberg, "An empirical evaluation of proposed changes for gambling diagnosis in the dsm-5," *Addiction*, vol. 108, no. 3, pp. 575–581, 2013.

[34] M. Griffiths, "Internet gambling: Issues, concerns, and recommendations," *CyberPsychology & behavior*, vol. 6, no. 6, pp. 557–568, 2003.

[35] D. Cemiloglu, E. Arden-Close, S. Hodge, T. Kostoulas, R. Ali, and M. Catania, "Towards ethical requirements for addictive technology: The case of online gambling," in *2020 1st workshop on ethics in requirements engineering research and practice (REthics)*. IEEE, 2020, pp. 1–10.

[36] S. Gainsbury, J. Parke, and N. Suhonen, "Consumer attitudes towards internet gambling: Perceptions of responsible gambling policies, consumer protection, and regulation of online gambling sites," *Computers in Human Behavior*, vol. 29, no. 1, pp. 235–245, 2013.

[37] M. Yani-de Soriano, U. Javed, and S. Yousafzai, "Can an industry be socially responsible if its products harm consumers? the case of online gambling," *Journal of business ethics*, vol. 110, pp. 481–497, 2012.

[38] D. Peraković, L. Cetinić, I. Cvitić, and M. Periša, "Cybersecurity validation in the online gambling industry," in *Design, Simulation, Manufacturing: The Innovation Exchange*. Springer, 2022, pp. 62–72.

[39] T. Husen, W. D. Suryandari, and T. Susilowati, "Legal aspects in developing security systems to counter fraud and manipulation threats in online gambling," *Return: Study of Management, Economic and Bussines*, vol. 3, no. 8, pp. 609–617, 2024.

[40] B. Armoon, M. D. Griffiths, R. Mohammadi, and E. Ahounbar, "Suicidal behaviors and associated factors among individuals with gambling disorders: A meta-analysis," *Journal of gambling studies*, vol. 39, no. 2, pp. 751–777, 2023.

[41] S. Monaghan and A. Blaszczynski, "Electronic gaming machine warning messages: Information versus self-evaluation," *The Journal of Psychology*, vol. 144, no. 1, pp. 83–96, 2009.

[42] ——, "Impact of mode of display and message content of responsible gambling signs for electronic gaming machines on regular gamblers," *Journal of Gambling Studies*, vol. 26, pp. 67–88, 2010.

[43] C. Kiyak, D. Cetinkaya, J. McAlaney, S. Hodge, and R. Ali, "Interrupting dissociation of players through real-time digital tasks during online gambling," *International Journal of Human–Computer Interaction*, vol. 40, no. 18, pp. 5247–5258, 2024.

[44] N. Hopfgartner, M. Auer, T. Santos, D. Helic, and M. D. Griffiths, "The effect of mandatory play breaks on subsequent gambling behavior among norwegian online sports betting, slots and bingo players: A large-scale real world study," *Journal of Gambling Studies*, pp. 1–16, 2021.

[45] M. Auer and M. D. Griffiths, "The use of personalized messages on wagering behavior of swedish online gamblers: An empirical study," *Computers in Human Behavior*, vol. 110, p. 106402, 2020.

[46] M. M. Auer and M. D. Griffiths, "Personalized behavioral feedback for online gamblers: A real world empirical study," *Frontiers in Psychology*, vol. 7, p. 1875, 2016.

[47] ——, "Testing normative and self-appraisal feedback in an online slot-machine pop-up in a real-world setting," *Frontiers in psychology*, vol. 6, p. 339, 2015.

[48] M. N. Potenza, M. A. Steinberg, S. D. McLaughlin, R. Wu, B. J. Rounsaville, and S. S. O'Malley, "Gender-related differences in the characteristics of problem gamblers using a gambling helpline," *American Journal of Psychiatry*, vol. 158, no. 9, pp. 1500–1505, 2001.

[49] W. Manian, X. Li, Z. Zeng, and X. Wang, "Characteristics of gambling helpline callers in macao: A regional comparison," *Journal of Gambling Studies*, vol. 40, no. 3, pp. 1607–1622, 2024.

[50] M. Griffiths, A. Scarfe, and P. Bellringer, "The uk national telephone gambling helpline—results on the first year of operation," *Journal of Gambling studies*, vol. 15, no. 1, pp. 83–90, 1999.

[51] V. Marionneau, S. Kristiansen, H. Lindqvist, I. Silvennoinen, M. Eidem, L. P. Degnepoll, and H. Wall, "For debate: Towards standardised data collection practices for gambling helplines," *Nordic Studies on Alcohol and Drugs*, p. 14550725251341789, 2025.

[52] S. N. Rodda, N. Hing, and D. I. Lubman, "Improved outcomes following contact with a gambling helpline: the impact of gender on barriers and facilitators," *International Gambling Studies*, vol. 14, no. 2, pp. 318–329, 2014.

[53] M. Abbott, D. C. Hodgins, M. Bellringer, A. C. Vandal, K. Palmer Du Preez, J. Landon, S. Sullivan, S. Rodda, and V. Feigin, "Brief telephone interventions for problem gambling: A randomized controlled trial," *Addiction*, vol. 113, no. 5, pp. 883–895, 2018.

[54] H. Wall, K. Magnusson, C. Hellner, G. Andersson, N. Jayaram-Lindström, and I. Rosendahl, "The evaluation of a brief icbt program with therapist support for individuals with gambling problems in the context of a gambling helpline: a randomized pilot trial," *Pilot and Feasibility Studies*, vol. 9, no. 1, p. 26, 2023.

[55] D. M. Sztein, C. E. Koransky, L. Fegan, and S. Himelhoch, "Efficacy of cognitive behavioural therapy delivered over the internet for depressive symptoms: A systematic review and meta-analysis," *Journal of telemedicine and telecare*, vol. 24, no. 8, pp. 527–539, 2018.

[56] K. Shandley and S. Moore, "Evaluation of gambler's helpline: A consumer perspective," *International Gambling Studies*, vol. 8, no. 3, pp. 315–330, 2008.

[57] N. Hing, E. Nuske, S. M. Gainsbury, A. M. Russell, and H. Breen, "How does the stigma of problem gambling influence help-seeking, treatment and recovery? a view from the counselling sector," *International Gambling Studies*, vol. 16, no. 2, pp. 263–280, 2016.

[58] M. Pérez-Escolar and F. Canet, "Research on vulnerable people and digital inclusion: toward a consolidated taxonomical framework," *Universal access in the information society*, vol. 22, no. 3, pp. 1059–1072, 2023.

[59] L. Simko, A. Lerner, S. Ibtasam, F. Roesner, and T. Kohno, "Computer security and privacy for refugees in the united states," in *2018 IEEE symposium on security and privacy (SP)*. IEEE, 2018, pp. 409–423.

[60] M. A. DeVito, A. M. Walker, and J. R. Fernandez, "Values (mis) alignment: Exploring tensions between platform and lgbtq+ community design values," *Proceedings of the ACM on Human-Computer Interaction*, vol. 5, no. CSCW1, pp. 1–27, 2021.

[61] S. I. Ahmed, M. R. Haque, J. Chen, and N. Dell, "Digital privacy challenges with shared mobile phone use in bangladesh," *Proceedings of the ACM on Human-computer Interaction*, vol. 1, no. CSCW, pp. 1–20, 2017.

[62] R. Chatterjee, P. Doerfler, H. Orgad, S. Havron, J. Palmer, D. Freed, K. Levy, N. Dell, D. McCoy, and T. Ristenpart, "The spyware used in intimate partner violence," in *2018 IEEE Symposium on Security and Privacy (SP)*. IEEE, 2018, pp. 441–458.

[63] S. Havron, D. Freed, R. Chatterjee, D. McCoy, N. Dell, and T. Ristenpart, "Clinical computer security for victims of intimate partner violence," in *28th USENIX Security Symposium (USENIX Security 19)*, 2019, pp. 105–122.

[64] S. Stephenson, M. Almansoori, P. Emami-Naeini, D. Y. Huang, and R. Chatterjee, "Abuse vectors: A framework for conceptualizing {IoT-Enabled} interpersonal abuse," in *32nd USENIX Security Symposium (USENIX Security 23)*, 2023, pp. 69–86.

[65] R. Bellini, K. Lee, M. A. Brown, J. Shaffer, R. Bhalerao, and T. Ristenpart, "The {Digital-Safety} risks of financial technologies for survivors of intimate partner violence," in *32nd USENIX Security Symposium (USENIX Security 23)*, 2023, pp. 87–104.

[66] M. Wei, E. Zeng, T. Kohno, and F. Roesner, "{Anti-Privacy} and {Anti-Security} advice on {TikTok}: Case studies of {Technology-Enabled} surveillance and control in intimate partner and {Parent-Child} relationships," in *Eighteenth Symposium on Usable Privacy and Security (SOUPS 2022)*, 2022, pp. 447–462.

[67] A. Frik, L. Nurgalieva, J. Bernd, J. Lee, F. Schaub, and S. Egelman, "Privacy and security threat models and mitigation strategies of older adults," in *Fifteenth symposium on usable privacy and security (SOUPS 2019)*, 2019, pp. 21–40.

[68] P. C. Kumar, M. Chetty, T. L. Clegg, and J. Vitak, "Privacy and security considerations for digital technology use in elementary schools," in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, 2019, pp. 1–13.

[69] Y. Hua, M. Naaman, and T. Ristenpart, "Characterizing twitter users who engage in adversarial interactions against political candidates," in *Proceedings of the 2020 CHI conference on human factors in computing systems*, 2020, pp. 1–13.

[70] H. M. Mentis, G. Madjaroff, and A. K. Massey, "Upside and downside risk in online security for older adults with mild cognitive impairment," in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, 2019, pp. 1–13.

[71] S. I. Hashmi, R. Sarfaraz, L. Gröber, M. Javed, and K. Krombholz, "Understanding the security advice mechanisms of low socioeconomic pakistanis," in *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*, 2025, pp. 1–25.

[72] S. E. McGregor, P. Charters, T. Holliday, and F. Roesner, "Investigating the computer security practices and needs of journalists," in *24th USENIX Security Symposium (USENIX Security 15)*, 2015, pp. 399–414.

[73] P. Wisniewski, H. Xu, M. B. Rosson, and J. M. Carroll, "Parents just don't understand: Why teens don't talk to parents about their online risk experiences," in *Proceedings of the 2017 ACM conference on computer supported cooperative work and social computing*, 2017, pp. 523–540.

[74] N. Warford, T. Matthews, K. Yang, O. Akgul, S. Consolvo, P. G. Kelley, N. Malkin, M. L. Mazurek, M. Sleeper, and K. Thomas, "Sok: A framework for unifying at-risk user research," in *2022 IEEE Symposium on Security and Privacy (SP)*. IEEE, 2022, pp. 2344–2360.

17

[75] E. Tseng, D. Freed, K. Engel, T. Ristenpart, and N. Dell, "A digital safety dilemma: Analysis of computer-mediated computer security interventions for intimate partner violence during covid-19," in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, 2021, pp. 1–17.

[76] R. Jeong and S. Chiasson, "'lime','open lock', and'blocked' children's perception of colors, symbols, and words in cybersecurity warnings," in *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 2020, pp. 1–13.

[77] N. Sambasivan, A. Batool, N. Ahmed, T. Matthews, K. Thomas, L. S. Gaytán-Lugo, D. Nemer, E. Bursztein, E. Churchill, and S. Consolvo, "" they don't leave us alone anywhere we go" gender and digital abuse in south asia," in *proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, 2019, pp. 1–14.

[78] C. Chen, N. Dell, and F. Roesner, "Computer security and privacy in the interactions between victim service providers and human trafficking survivors," in *28th USENIX Security Symposium (USENIX Security 19)*, 2019, pp. 89–104.

[79] Y. Zou, A. McDonald, J. Narakornpichit, N. Dell, T. Ristenpart, K. Roundy, F. Schaub, and A. Tamersoy, "The role of computer security customer support in helping survivors of intimate partner violence," in *30th USENIX security symposium (USENIX Security 21)*, 2021, pp. 429–446.

[80] J. Vitak, Y. Liao, M. Subramaniam, and P. Kumar, "'i knew it was too good to be true" the challenges economically disadvantaged internet users face in assessing trustworthiness, avoiding scams, and developing self-efficacy online," *Proceedings of the ACM on human-computer interaction*, vol. 2, no. CSCW, pp. 1–25, 2018.

[81] E. Tseng, M. Sabet, R. Bellini, H. K. Sodhi, T. Ristenpart, and N. Dell, "Care infrastructures for digital security in intimate partner violence," in *Proceedings of the 2022 CHI conference on human factors in computing systems*, 2022, pp. 1–20.

[82] L. Ramjit, N. Dolci, F. Rossi, R. Garcia, T. Ristenpart, and D. Cuomo, "Navigating traumatic stress reactions during computer security interventions," in *33rd USENIX Security Symposium (USENIX Security 24)*, 2024, pp. 2011–2028.

[83] R. Bellini, E. Tseng, N. Warford, A. Daffalla, T. Matthews, S. Consolvo, J. P. Woelfer, P. G. Kelley, M. L. Mazurek, D. Cuomo *et al.*, "Sok: Safer digital-safety research involving at-risk users," in *2024 IEEE Symposium on Security and Privacy (SP)*. IEEE, 2024, pp. 635–654.

[84] F. Siddiqui, D. Varghese, P. Singh, S. B. Bayyavarapu, S. Lindsay, D. Chandrasekara, P. Kulkarni, L. Wu, T. Alshehri, and P. Olivier, "Exploring the digital support needs of caregivers of people with serious mental illness," in *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*, 2023, pp. 1–16.

[85] A. S. Wani, I. Joshi, N. I. Nahvi, and P. Singh, "" unrest and trauma stays with you!": Navigating mental health and professional service seeking in kashmir," in *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*, 2024, pp. 1–17.

[86] S. Aldaweesh, D. Alateeq, M. Van Kleek, and N. Shadbolt, ""if someone walks in on us talking, pretend to be my friend, not my therapist": Challenges and opportunities for digital mental health support in saudi arabia," in *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*, 2024, pp. 1–19.

[87] A. Chandrasekaran, R. Currano, V. Batool, K. Chen, E. L. Murnane, D. Sirkin, and M. L. Mauriello, "Therapy for therapists: Design opportunities to support the psychological well-being of mental health workers," *Proceedings of the ACM on Human-Computer Interaction*, vol. 8, no. CSCW2, pp. 1–34, 2024.

[88] J. X. Chen, A. McDonald, Y. Zou, E. Tseng, K. A. Roundy, A. Tamersoy, F. Schaub, T. Ristenpart, and N. Dell, "Trauma-informed computing: Towards safer technology experiences for all," in *Proceedings of the 2022 CHI conference on human factors in computing systems*, 2022, pp. 1–20.

[89] M. Sim, K. Hugenberg, T. Kohno, and F. Roesner, "A scalable inclusive security intervention to center marginalized & vulnerable populations in security & privacy design," in *Proceedings of the 2023 New Security Paradigms Workshop*, 2023, pp. 102–115.

[90] L. Stapleton, S. Liu, C. Liu, I. Hong, S. Chancellor, R. E. Kraut, and H. Zhu, "" if this person is suicidal, what do i do?": Designing computational approaches to help online volunteers respond to suicidality," in *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*, 2024, pp. 1–21.

[91] B.-J. Grant, R. T. Shields, J. Tabachnick, and J. Coleman, ""i didn't know where to go": An examination of stop it now!'s sexual abuse prevention helpline," *Journal of Interpersonal Violence*, vol. 34, no. 20, pp. 4225–4253, 2019.

[92] M. T. Liu, T. T. G. Chang, E. H. Loi, and A. C. H. Chan, "Macau gambling industry: Current challenges and opportunities next decade," *Asia Pacific Journal of Marketing and Logistics*, vol. 27, no. 3, pp. 499–512, 2015.

[93] X. Bian, L. Yao, and Y. Bian, "Effective covid-19 prevention and control in areas of ultra-dense population: Lessons from macau sar," *Journal of Clinical Intensive Care and Medicine*, vol. 5, pp. 22–25, 2020.

[94] H. K. Knudsen, L. J. Ducharme, and P. M. Roman, "Counselor emotional exhaustion and turnover intention in therapeutic communities," *Journal of substance abuse treatment*, vol. 31, no. 2, pp. 173–180, 2006.

[95] S. R. Pendse, F. M. Lalani, M. De Choudhury, A. Sharma, and N. Kumar, "" like shock absorbers": understanding the human infrastructures of technology-mediated mental health support," in *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 2020, pp. 1–14.

[96] S. R. Pendse, A. Sharma, A. Vashistha, M. De Choudhury, and N. Kumar, ""can i not be suicidal on a sunday?": understanding technology-mediated pathways to mental health support," in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, 2021, pp. 1–16.

[97] R. E. Boyatzis, *Transforming qualitative information: Thematic analysis and code development*. sage, 1998.

[98] M. L. McHugh, "Interrater reliability: the kappa statistic," *Biochemia medica*, vol. 22, no. 3, pp. 276–282, 2012.

[99] P. Emami-Naeini, H. Dixon, Y. Agarwal, and L. F. Cranor, "Exploring how privacy and security factor into iot device purchase behavior," in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, 2019, pp. 1–12.

[100] E. Deldari, P. Thakkar, and Y. Yao, "Users' perceptions of online child abuse detection mechanisms," *Proceedings of the ACM on Human-Computer Interaction*, vol. 8, no. CSCW1, pp. 1–26, 2024.

[101] A. A. Hasegawa, D. Inoue, and M. Akiyama, "How weird is usable privacy and security research?" in *33rd USENIX Security Symposium*, 2024.

[102] M. L. Hatzenbuehler, "Structural stigma: Research evidence and implications for psychological science." *American Psychologist*, vol. 71, no. 8, p. 742, 2016.

[103] D. M. Ledgerwood, C. L. Arfken, A. Wiedemann, K. E. Bates, D. Holmes, and L. Jones, "Who goes to treatment? predictors of treatment initiation among gambling help-line callers," *The American Journal on Addictions*, vol. 22, no. 1, pp. 33–38, 2013.

[104] J. Pulford, M. Bellringer, M. Abbott, D. Clarke, D. Hodgins, and J. Williams, "Reasons for seeking help for a gambling problem: The experiences of gamblers who have sought specialist assistance and the perceptions of those who have not," *Journal of Gambling Studies*, vol. 25, pp. 19–32, 2009.

[105] E. Whittaker and R. M. Kowalski, "Cyberbullying via social media," *Journal of school violence*, vol. 14, no. 1, pp. 11–29, 2015.

[106] N. Leiper, "Tourism and gambling," *GeoJournal*, vol. 19, pp. 269–275, 1989.

[107] G. H. Walker, N. A. Stanton, P. M. Salmon, and D. P. Jenkins, "A review of sociotechnical systems theory: a classic concept for new command and control paradigms," *Theoretical issues in ergonomics science*, vol. 9, no. 6, pp. 479–499, 2008.

[108] W. Eckerson, "Three tier client/server architecture: Achieving scalability, performance and efficiency in client server applications," *Open Information Systems*, vol. 10, no. 1, 1995.

[109] J. Petit, F. Schaub, M. Feiri, and F. Kargl, "Pseudonym schemes in vehicular networks: A survey," *IEEE communications surveys & tutorials*, vol. 17, no. 1, pp. 228–255, 2014.

[110] J. C. Velten, R. Arif, and D. Moehring, "Managing disclosure through social media: how snapchat is shaking boundaries of privacy perceptions," *The Journal of Social Media in Society*, vol. 6, no. 1, pp. 220–250, 2017.

[111] C. Meurisch, B. Bayrak, and M. Mühlhäuser, "Privacy-preserving ai services through data decentralization," in *Proceedings of The Web Conference 2020*, 2020, pp. 190–200.

[112] P. Radanliev, O. Santos, A. Brandon-Jones, and A. Joinson, "Ethics and responsible ai deployment," *Frontiers in Artificial Intelligence*, vol. 7, p. 1377011, 2024.

Appendix A.
Interview Protocol

- **Demographics & Work Experience:**
  - Can you briefly describe your professional background and your current role in providing interventions for individuals affected by gambling harm?
  - How long have you been working in this area?
- **Institutional Context:**
  - Can you describe the operational model of your organization? How does your team support individuals affected by gambling harm?
  - What does a typical day at work look like for you? Could you walk me through your daily routines and workflows when you interact with help-seekers?
  - **Help-Seeker Characteristics:**
    * Can you describe the typical characteristics of the help-seekers you work with? For example, do you notice trends in their age, gender, or emotional state when they seek support?
    * What are the main issues that help-seekers usually present when they contact your service? Are there common themes or patterns you notice in the problems they are trying to resolve?
    * What role do help-seekers' expectations play in shaping the way you deliver support?
- **Information Gathering:**
  - What kind of information do you feel is critical to know in order to effectively support your intervention work?
  - When diagnosing a help-seeker's issue, what specific information do you typically gather? Why is this information critical for diagnosis?
  - In counseling or providing support, what types of information are most important for you to understand about the help-seeker's situation?

  - Are there any challenges in obtaining this information from help-seekers? If so, what are the main obstacles in gathering it?
  - Have you ever faced challenges in obtaining the necessary information? If so, what are the reasons for this?
  - In your experience, are there ever situations where obtaining critical information is challenging? What are some of the barriers you've encountered?

- **Overall Perceptions of Usability:**
  - How do you feel about using different channels (e.g., phone, chat, email, in-person) to provide intervention?
  - Do you think any particular channel is more usable for your work? Why?
  - **Perceptions of Effectiveness:**
    * How effective do you find the different channels in helping you achieve your goals when intervening with help-seekers?
    * Do you feel that certain channels lead to more accurate or complete interventions? Why or why not?
  - **Perceptions of Efficiency:**
    * How efficient are the different channels in terms of the time and effort required to provide intervention?
    * Are there any channels that save you time or effort compared to others? If so, which ones and why?
  - **Perceptions of Satisfaction:**
    * How satisfied are you with using each of the different channels to provide intervention?
    * Are there any channels you find easier or more convenient to use than others? Why?
    * What types of channels tend to lead to more positive interactions with help-seekers, if any? Why?
- **Impact of Privacy Sensitivity on Usability:**
  - How do privacy concerns from help-seekers affect your intervention work? Can you provide any examples?
  - Are there any challenges related to privacy that you face when using certain helpline channels?
  - **Understanding the Need for Privacy:**
    * Why do you think help-seekers have strong privacy concerns when reaching out for support?
    * Are there any specific fears or harms that might drive this need for privacy?
    * What kinds of risks or concerns do you think help-seekers have related to privacy? Why?
  - **Ensuring Privacy:**
    * How do you ensure the privacy of help-seekers during your interventions? Are there specific measures or procedures in place to protect their information?

* How do you communicate with help-seekers about privacy protections? What steps do you take to ensure they understand how their information will be handled?

– **Impact on Intervention:**
  * In your experience, do privacy concerns influence your ability to intervene effectively? If so, in what ways?
  * Are there any negative consequences of these privacy concerns that you feel affect the intervention process?
  * What are some potential obstacles or challenges that arise from these privacy concerns when providing support to help-seekers?

– **Overcoming Privacy Challenges:**
  * How do you overcome the challenges posed by privacy concerns in your work? Are there strategies you use to balance privacy with effective intervention?
  * Are there any technologies or approaches you think could help address privacy concerns while improving your interventions?

* **Challenges with Current Helplines:**
  – What are some of the challenges you face when using helplines to provide psychological interventions for help-seekers?
  – Are there any limitations in the current technology that hinder your work or your ability to provide effective support?

* **Suggestions for Improvement:**
  – In your opinion, how can current technological models for helplines be improved to better support both service providers and help-seekers?
  – Are there any specific features or tools that you think would enhance your work?

* **Emerging Technologies:**
  – How do you feel about the potential use of emerging technologies (e.g., AI, chatbots, virtual reality) in providing psychological interventions for gambling harm?
  – Have you had any experience with these technologies in your work? If so, what was your experience like?
  – What do you think the role of these technologies could be in the future of helplines for psychological intervention?

* **Follow-Up on Emerging Technologies:**
  – Do you think that any specific emerging technology could improve privacy protection or enhance usability in your work? Why or why not?

* Ask if the participant has any additional thoughts or comments on the topics discussed.
* Thank the participant for their time and insights.
* Offer to share the results of the research, if applicable.

Appendix B.
Interview Codebook

TABLE 4: Codebook developed from thematic analysis, including themes, sub-themes, definitions, representative quotes, and frequency of occurrence across interviews.

Themes	Subthemes	Definitions	Examples from Transcripts	Number
A. Demographics & Work	Professional background Experience	Participant's education, training, and professional background relevant to gambling harm interventions.	My undergraduate degree is in sociology	13
	Current role & responsibilities	Description of participant's current position and responsibilities in supporting individuals with gambling harm.	I mainly provide first-line assessments and crisis intervention.	13
	Years of experience	Length of time and trajectory in the field.	I've been working in this area for about seven years.	13
B. Institutional Context	Organizational model	How the organization operates and provides services to help-seekers.	We have a central helpline and then refer people to face-to-face services.	13
	Team structure & collaboration	Roles within the team and collaboration with internal/external partners.	We work in shifts, and we have weekly case review meetings.	13
	Daily workflow	A typical day, routine practices, and service flow.	My daily work includes answering helpline calls, following up on helpline cases, and carrying out some offline promotional activities for the gambling helpline.	13
C. Help-Seeker Characteristics	Demographics of help-seekers	Typical age, gender, occupation, or other demographic trends.	Most callers are men in their late 20s to 40s.	11
	Emotional & motivational states	Emotional conditions or motivations of help-seekers at the time of contact.	They often feel ashamed and anxious about their situation.	11
	Common presenting issues	Recurring problems (e.g., debt, relationship issues, relapse).	The most common issue is financial debt due to gambling.	7
	Expectations & goals	How help-seekers' expectations shape service delivery.	Some of them come to us for help because a family member is struggling with a gambling addiction.	10
	Privacy & security concerns	Privacy fears expressed by help-seekers when contacting services.	They worry about being identified.	10
D. Information Gathering	Diagnostic information	Specific assessment/diagnostic data	We usually begin by assessing the severity of the gambling addiction..	8
	Contextual information	Situational data such as family, social support, and financial context.	Family support plays a big role in whether they can recover.	9
	Environmental safety information	Assessing whether the help-seeker's living or working environment is safe (e.g., risk of domestic violence, financial coercion, physical danger).	Sometimes we need to check if their home environment is safe before continuing the intervention.	9
	Barriers to information gathering	Difficulties or obstacles in obtaining necessary information.	Many are reluctant to disclose debts because of privacy concerns.	10
E. Experiences with Communication Channels	Effectiveness – Confidentiality	Perceptions of how confidentiality concerns and incomplete disclosure affect effectiveness in supporting accurate diagnosis and delivering a comprehensive intervention.	Sometimes they'll repeatedly ask if it's anonymous, if their information will be kept confidential	6
	Effectiveness – Digital	Perceptions of how current digital tools affect effectiveness by failing to adequately support professional therapeutic techniques, thereby limiting the accuracy and completeness of interventions.	We mainly rely on Excel, but there are still challenges in scaling this concept or making it widely understandable...Usually it is easier to understand if they have a bachelor's degree or above	9
	Effectiveness – Multi-dimension	Perceptions of how helplines affect effectiveness by enabling multi-dimensional assessment through access to diverse information sources (e.g., emotional cues, contextual details) that improve accuracy and completeness.	When talking to a help-seeker, I pay close attention to background sounds. If I hear strong wind or ocean waves, it might mean the person is on a tall building or by the sea (not a safe place), which makes me more alert to their condition	7
	Efficiency – Real-time communication	Perceptions of how real-time helpline channels affect efficiency, particularly in crisis situations.	Once a help-seeker expressed harmful thoughts through social media, we immediately called them back to quickly establish contact	8
	Efficiency – Supporting material exchange	Perceptions of how the ability to exchange supporting material through helpline channels affects	Sometimes they can't explain clearly what kind of debt they have, but if they send us a document or screenshot, we	5