Helplines for problem gambling worldwide: What do they do and whom do they reach?

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Abstract: Problem gambling (PG), defined as gambling with risked or actual negative consequences, has increased during recent decades, generating serious harm for individuals, their concerned significant others (CSO's), and society. One way to reduce PG among individuals and in society is to offer qualified support via remote helplines. In order to update limited current information about gambling helpline services worldwide, a global survey was conducted, targeting helplines for PG to map services directly offered by each helpline, communication channels utilized, and client groups served. All known helplines (n=82) were approached, with a response rate of 37% (n=30). Most helplines offered their clients information, advice, and referral to treatment providers. The type of help directly offered for individuals with PG mostly included motivational interviewing (MI) and advice, while CSO's were offered supportive counseling and advice. All helplines offered telephone sessions as their main communication channel and commonly also included chat- and email-based support. Men were in the majority among callers concerning PG while most CSO callers were women; other client characteristics were similar on all continents. Suggested directions for future research include improving and harmonizing helpline data reporting to facilitate collecting data from a larger proportion of helplines, exploring how helplines might

increase the evidence base for services offered, particularly to CSO's, and increasing helpline outreach.

Keywords: Concerned Significant Others, Gambling, Problem Gambling, Helplines, Motivational Interviewing, Treatment.

Introduction

Although gambling is an ancient and transcultural leisure activity, it is also an activity associated with severe negative consequences. Problem gambling (PG) generates gambling-related harms consisting of psychological distress and negative impacts on work, finances, education, relationships, and health (Abbott, 2017). People with PG also report high rates of comorbidity with mood, anxiety, and substance use disorders (Petry et al., 2005; Rash et al., 2016). Gambling-related harm has been calculated to a 2.5 times greater burden on individuals than that of diabetes (Browne et al., 2017a), and has also been found to occur at twice the rate of harm from bipolar disorder, eating disorders, cannabis dependence, and schizophrenia combined (Browne et al., 2017b).

The clinical diagnosis of Gambling Disorder (GD) is defined by the American Psychiatric Association (APA) in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) as a "persistent and recurrent problematic gambling behavior leading to clinically significant impairment or distress" (American Psychiatric Association, Gambling disorder, 2013). Examples of criteria for gambling disorder are a need to gamble with increasingly greater amounts of money in order to achieve the same excitement level as before (increased tolerance); experiencing attempts to quit or decrease gambling as leading to irritability; risking or losing an important aspect of life such as a job or a relationship due to gambling; and chasing losses, where individuals gamble to regain money lost earlier (American Psychiatric Association, 2013).

The prevalence of PG, as defined by diagnostic criteria, ranged between 0.1%-5.8% across the world in 2015 (Calado & Griffith, 2016). Higher prevalence rates apply to PG that does not necessarily fulfill diagnostic criteria. In addition, the prevalence of PG seems to be higher in some groups than in others, where being male, unmarried, unemployed, a young adult and having a low income, a low level of education, and living in a disadvantaged neighborhood with a large number of gambling venues, are all variables associated with a higher risk of developing a pattern of PG (Abbott, 2017). PG not only leads to negative consequences for the individual, but also negatively impacts the individual's concerned significant others (CSO's). People living with someone with PG experience an increased risk for mental health issues, physical abuse, problematic alcohol consumption, economic worry, relationship problems, and PG behavior in themselves (Swedish Public Health Agency, 2018). Many CSO's therefore seek professional help on their own account, where those

who did so at an Australian web-based counseling service were mostly romantic partners to the individual with PG, females, and under 30 years old (Dowling et al., 2014).

Gambling is increasingly viewed as a public health issue requiring wide prevention efforts (e.g., Swedish Public Health Agency, 2019a; American Public Health Association, 2020). Different types of gambling prevention programs and policies have been developed within public health programs, including reducing the number of gambling venues, minimizing their opening hours, and establishing access restrictions, e.g., for certain age groups (Abbott, 2017). One way to prevent and reduce PG is through gambling helplines, which are services providing brief remote help and support for those who feel that their own or their significant other's gambling has become excessive and risks leading to negative consequences or has already done so. Helplines can be viewed as a middle road between public health and treatment in the healthcare setting, sometimes supporting people to conduct and maintain long-term behavioral changes (Clifford, 2008).

A recent systematic review and meta-analysis on the prevalence of help-seeking behavior (including helplines) among individuals with moderate-risk and problem gambling found that only 4% of individuals with moderate risk of PG seek help, in contrast to individuals where PG has already developed, among whom about 20% seek help (Bijker, Booth et al., 2022). Earlier studies have indicated that a large number of people contacting gambling helplines are seeking help for the first time (Rodda & Lubman, 2014). The first known survey of helplines indicated there were about 50 gambling helplines around the world (Clifford, 2008), and reported that many helplines offered their callers information about PG and referral to other agencies, such as professional treatment centers. Some helplines, for example in Finland, New Zealand, and the state of Vermont in the USA, also offered distance counselling and motivational enhancement. Clifford (2008) also reported that most helplines collected caller information, which is analyzed at a group level to report trends and intervention outcomes. Since this early study, research indicates that helplines have expanded to provide services via different communication channels and seem to reach a variety of audiences (Rodda & Lubman, 2014); some examples are the Swedish gambling helpline that offers both telephone, web-based chat, and email (Berman, 2019), while the Australian helpline described by Rodda and Lubman (2014) used both email and chat as communication channels to clients. In the latter study, chat clients were mostly male and under 40 years old and email clients were mostly female and over 40, while the majority of the helpline's remaining clients were under 40. In the same study, electronic gaming machines were the most problematic gambling type (Rodda & Lubman, 2014), and a more recent study of gamblers accessing an online self-help tool sited at the Swedish national gambling helpline showed that online casino games were most strongly associated

with problem gambling and suggested that this type of game should be the focus of prevention efforts (Wall, Berman et al., 2020).

Even though gambling helplines can significantly contribute to prevention efforts, we know of only one earlier international mapping of gambling helplines, which covered a selected sample of helplines (Clifford, 2008). Since then, the number of gambling helplines has increased, and knowledge about the current state of gambling helplines is lacking. This article presents the results of an exploratory survey study aiming to map all gambling helplines globally. The two main aims are to investigate what the helplines do and whom they reach. Specific research questions are detailed in Table 1.

Table 1. Overall and specific research questions investigated in the global survey study.

What Do the Helplines Do?	**Whom Do the Helplines Reach?**
What kind of help do helplines offer individuals with PG and CSO's, as well as any other clients?	What proportion of the relevant population of individuals with PG contacts the helplines?
What communication channels do helplines use and what are their opening hours?	How are helpline clients distributed between individuals with PG, CSO's, healthcare professionals, and any other clients?
What level of prevention do helplines target, and do they offer follow-up calls?	What is the distribution of gender, occupational status, age, and problematic gambling types among individuals with PG?
How long do individual client contacts last and how long have helplines existed?	What is the distribution of gender, occupational status, age, and type of relationship to the individual with PG among the CSO's contacting them?
Do helplines collect client data? If so, what kind of information?	Do distributions of client characteristics differ between helplines on different continents?
Do helplines on different continents differ regarding working methods and opening hours?	Do helplines with various opening hours and different communication channels differ regarding the distribution between gamblers and CSO's, and the distribution of client characteristics?

Method

Participants

The survey invitation was sent to 82 gambling helplines identified by the study authors in the following 25 countries: USA, Canada, UK, Ireland, France, Belgium, Norway, Sweden, Finland, Denmark, Germany, The Netherlands, Malta, Austria, Estonia, Greece, Slovakia, Italy, South Africa, Singapore, Hong Kong, Korea, Japan, Macau, New Zealand, and Australia. Thirty (37%) of the helplines responded to the survey. See Table 2 for an overview. Individuals who gamble, where the level of problem severity is unknown, are referred to here as gamblers, whereas individuals with PG are referred to as such.

Table 2. Overview of gambling helplines invited to the survey, by continent

Continent	Number of Helplines Invited	Response Rate[a] n (%)
North America	48	16 (33)
Europe	19	11 (58)
Asia	6	2 (33)
Oceania	8	1 (13)
Africa	1	0 (0)
Total	82	30 (37)

[a]This column states the number and the proportion of helplines who responded to the survey, per continent.

Design

This was an exploratory online survey study of all globally known gambling helplines.

Materials

For the construction and the distribution of the survey, and for the collection of survey responses, the Qualtrics[xm] software program was used (Qualtrics LCC, 2020). For statistical analyses the software program IBM SPSS Statistics, version 26 for MacIntosh (IBM, 2020) was used.

Procedure

The survey invitation was sent via email and described the study in general; the email was personally sent by the first author, who was then director of the Swedish National Gambling Helpline. Within 24 hours of this initial email, an automatic email with a link to the survey was sent from the survey platform, Qualtrics[xm]. The distribution procedure occurred in two steps: first, the survey was distributed to the Nordic helplines (Denmark, Finland, and Norway) only, in order to allow for possible adjustments to the survey following feedback; however, no such feedback was sent, so two weeks after the Nordic distribution, the same version of the survey was sent to the helplines in the remaining countries. Thereafter, three automatic reminder emails were sent with one-week intervals to non-responding participants. Approximately a week and a half after the last planned reminder, an additional email was sent from the first author directly to helplines who had not yet responded. Within 24 hours, this email was followed by an automatic reminder from Qualtrics[xm] with a new link to the survey.

After the final response deadline, a total of 24 helplines had answered the survey (see Supplementary material A). The remaining helplines were sent a shorter survey, containing a total of 11 multiple choice

questions (see Supplementary material B), with the hope of obtaining at least some information from non-responding helplines, and yielded six responses. All results were then exported to SPSS for statistical analysis. The helplines were categorized by continent, with the majority coming from North America, followed by Europe, then Asia and Oceania. Only two helplines answered from Asia, and only one helpline answered from Oceania. The response rate was the same in Asia as in North America though, with Europe having the highest response rate. See Table 2.

Informed consent

The first survey item provided general information about the purpose of the survey and about what participation would entail, followed by a question with a single, forced response alternative, asking whether the participant gave informed consent to their survey responses being treated as data. Only participants who provided their consent were able to continue to the survey. Ethical approval was not required according to Swedish law, since the study did not collect any sensitive personal data.

Survey construction

The survey was constructed collaboratively by the authors. A first survey draft was then uploaded to the survey platform Qualtrics[xm] and a test link was sent to employees at the National Swedish Helpline and author SR's research assistants at the University of Auckland. Feedback on user-friendliness led to minor changes. The final survey contained 100 questions, excluding the initial informed consent question. Table 3 shows the thematic categories for the questions in the long survey (Supplementary Material A), where it should be noted that some of the questions included were not analyzed in this study.

Table 3. Survey item categories

Item Categories	Number of Items per Category
Informed Consent	(1)
General Information About the Helpline	39
Target Group	9
Number of Clients in 2019/2018[a]	1
General Client Characteristics	5
Characteristics of Gambling Clients	10
Characteristics of CSO's	4
Working Methods	6
Quality Assurance[b]	5
Staff[b]	7
Finances[b]	6
Public Reports[b]	4
Plans for Future Development[b]	4
Total	100

[a]Number of clients contacting the helpline in 2018 or 2019, depending on the latest information available to the helpline. [b]These item categories were not included in the aim or the results of the current study.

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The survey questions offered single and multiple response alternatives, generally with a free text option for comments. Some free text questions were included, for example the one for entering distributions of client characteristics, formulated as:

> Please describe the client categories among those who contact you, for the latest year available (e.g., 2018 or 2019), and add information on the approximate percentage in each group, if available. For example, gamblers (50%), concerned significant others to gamblers (CSO's) (30%), healthcare workers and other professionals (10%), computer gamers (10%).

The format for additional free response questions about client characteristics was identical. Some of the questions were so-called filter questions, meaning that a specific answer led to other survey questions being displayed to the respondent. An example as the question "Do you

collect information about your clients (e.g., age, gender, employment)?" A negative response meant that the remaining questions about client characteristics were not displayed to that respondent.

Data analysis

Responses to single response questions were analyzed with frequency analysis, and frequencies for responses to multiple response questions, that allowed more than one response per participant, were analyzed with multiple response analysis. Crosstabulations were used for analysis of categorical variables.

As mentioned above, some questions about client characteristics were free response questions. The majority of these consisted of questions about the distributions of gender, age, and occupational status among gamblers and CSO's, the distribution of the most problematic types of gambling, and the distribution of different types of relationships to the gambler among CSO's. We opted for free response questions here because it was difficult to construct categorical response options that would fit all of the helplines' own categorizations. The respondents were asked to state the categories and the proportion of each category in percent. An example of how this could be done was given for each question. After retrieving the answers from all helplines, the data were categorized according to a uniform system so that the answers could be compared and reported in a systematic way.

Overall estimates of the proportion of individuals with problem gambling who actually reached a helpline were calculated in two steps. First, the proportion of the entire population in each country, province or state calling a helpline was calculated by dividing the number of individuals contacting the helpline with the total population of the region. We obtained population information from Worldometer (2020) for the Asian helpline regions, the Oceania helpline, and all European helplines, except for one German helpline, for which population data were obtained from the Federal Statistical Office of Germany (Statistisches Bundesamt, 2020). The population information for individual states in the USA was obtained from The United States' Census Bureau (2020), and for the only Canadian helpline who answered this question, population data were obtained from British Columbia's Central Statistical Agency (2020)Secondly, these percentages were divided by the average 2016 prevalence of problem gambling in each continent (Calado & Griffith, 2016), yielding an estimate of the percentage of individuals with problem gambling in each continent contacting any of the helplines included in this study.

Further information about the data analysis strategy can be found in Supplementary Material C.

Results

What Do They Do?

Communication channels

All 30 of the helplines that responded to the survey offered telephone calls as a communication channel, where over half (53%) began offering telephone services over ten years ago (for an overview, see Table 4a). The second most common channel was online chats/messages, followed by email communication. The least commonly offered communication channels were internet-enabled calling (offered by 17% of the helplines) and just two services offered video calls. The average length of telephone calls was 11-30 minutes. Target groups were gamblers, including individuals with PG, and CSO's; 20 of the helplines (67%) stated that healthcare workers were also a target group. Eleven helplines (37%) reported that they included additional groups in their target area.

Specific working methods

The most common services directly offered to clients by almost all helplines included distribution of information and advice as well as referral to external treatment. Advising healthcare professionals was the second most common service offered directly by the helpline, while peer support groups were the least frequently offered direct service. The most common direct interventions offered to individuals with PG were MI, brief advice, relapse prevention and online self-testing. Referral to external support and treatment meant referral to services offered by agencies outside the helpline. Table 4b shows an overview of services directly offered by all responding helplines, by continent.

Among the intervention options offered to gambling clients, Motivational Interviewing (MI; Miller & Rollnick, 2013; Berman, Beckman & Lindqvist, 2020) and brief advice were the most common, followed by relapse prevention. The least common intervention was the Community Reinforcement Approach (CRAFT). Almost half of the North American helplines offered MI, brief advice, and treatment that was guided by a specific treatment manual, followed by the 12-step method. A third of the North American helplines offered CBT without a specific treatment manual, and a fifth of them offered relapse prevention and Acceptance and Commitment Therapy (ACT); none offered CRAFT. As for the European helplines, almost all offered MI and brief advice, and a majority also offered relapse prevention. The only two helplines in the sample who offered CRAFT were also European; ACT and 12-step were only offered by one of the European helplines. Treatment with a specific gambling manual was offered by two helplines, and over a third of the European helplines offered CBT without a specific gambling manual. The two Asian helplines offered their gambling clients MI and brief advice, and one of the Asian helplines offered relapse prevention and CBT without a specific gambling manual. Neither of the Asian helplines offered 12-step, CRAFT, ACT or treatment with a specific gambling manual. The single Oceania helpline that

responded offered all of the interventions stated as response options, except for ACT, treatment with a specific gambling manual, and CRAFT. See Table 4b, Panel A, for an overview.

Almost half of the helplines offered online self-assessment, while other types of online services were offered in less than a third of cases. Of the North American helplines that answered the question about what online services they offered, a minority offered guided self-help programs or discussion forums, a quarter offered unguided self-help programs, and half offered online self-assessment. Of the European helplines who answered this question, guided self-help programs and discussion forums were offered by a minority of the helplines, while online self-assessment and other kinds of online services were offered by more than half of them. Less than a third offered an unguided self-help program. Of the two Asian helplines answering the question, one offered guided self-help and both offered self-assessment. The Oceania helpline offered only self-testing. See Table 4b, Panel B.

Type of Support Offered to CSO's

The question about helpline support offered to CSO's was answered by 21 helplines (70%). Brief advice, offered by almost all responding helplines, was the most frequently reported service offered to CSO's, followed by counselling. The least frequently offered service to CSO's was the 5-step method (Copello, Templeton et al., 2010). Of the two helplines who reported that they offered 5-step, one was from Asia and one was from Oceania. All three helplines that offered CRAFT were European. Of the European helplines who answered this question, a large majority offered brief advice and counselling. Fewer than one-third offered CRAFT or some other type of support, and none offered the 5-step method. Of the North American helplines who answered the question, a majority offered brief advice, and counselling and other types of support were offered by over half. None offered CRAFT or the 5-step method. Both the Asian helplines offered brief advice, counselling, and some other type of support and one also offered the 5-step method. The Oceania helpline offered brief advice, counselling, and the 5-step method. See Table 4b, Panel B.

Level of Prevention

Helplines were asked to define their target level of prevention, as primary, secondary or tertiary (universal, indicative or selective), for different working methods. Secondary prevention was the most commonly offered level of intervention. All European helplines that answered this question offered services at the level of primary prevention, where a majority also offered secondary prevention, and over half offered tertiary prevention. Of the North American helplines who answered this question, more than half offered primary prevention, and a large majority offered secondary and tertiary prevention. The two Asian helplines offered primary, secondary, and tertiary prevention. The single Oceania helpline offered

secondary and tertiary prevention, but no services at the primary prevention level. See Table 4b, Panel B.

Table 4a. What Do They Do? Communication

Communication Method	Frequencies in all helplines, *n* (%)
Communication Channels	
Telephone Calls	30 (100)
Online Chats/Messages	20 (67)
Emails	18 (60)
Text Messages (SMS)	13 (43)
Video Calls	2 (7)
Other[a]	6 (20)
Missing	0 (0)
Internet-Enabled Calling	5 (17)
No Internet-Enabled Calling	18 (60)
Missing	7 (23)
Startup of Telephone Calls	
1-2 Years Ago	2 (7)
3-5 Years Ago	3 (10)
6-10 Years Ago	3 (10)
Over 10 Years Ago	16 (53)
Missing	7 (23)
Length of Telephone Calls	
1-10 Minutes	9 (30)
11-30 Minutes	14 (47)
Don't Know	1 (3)
Missing	6 (20)

a. Other includes postal mail (n = 1), social media (n =1), Whatsapp, Facebook messages and Instagram (n = 1), an online platform (n = 1), and presentations about the helpline and gambling topics (n =1). One helpline used this response option to describe that the helpline was staffed 24 hours seven days a week, but that the chats, texts, and emails were staffed during office hours.

Table 4b, Panel A. What Do They Do? Directly Offered Services, Working Methods and Interventions

Interventions Offered to Clients in General	Total (n = 30) n (%)	North America (n = 16) n (% within area)	Europe (n = 11) n (% within area)	Asia (n = 2) n (% within area)	Oceania (n = 1) n (% within area)
Information and Advice	29 (97)	15 (94)	11 (100)	2 (100)	1 (100)
Treatment Referral	29 (97)	16 (100)	10 (91)	2 (100)	1 (100)
Advising Healthcare Professionals	15 (50)	4 (27)	9 (82)	1 (50)	1 (100)
Supportive Counseling	19 (63)	6 (40)	10 (91)	2 (100)	1 (100)
Peer Support Group	10 (33)	4 (27)	4 (36)	2 (100)	0 (0)
Other[a]	15 (50)	9 (56)	5 (46)	1 (50)	0 (0)
Missing	0 (0)	1 (6)	0 (0)	0 (0)	0(0)
Interventions Offered to Individuals with PG	**Total (n = 30) n (%)**	**North America (n = 16) n (% within area)**	**Europe (n = 11) n (% within area)**	**Asia (n = 2) n (% within area)**	**Oceania (n = 1) n (% within area)**
MI	20 (67)	7 (47)	10 (91)	2 (100)	1 (100)
Brief Advice	20 (67)	7 (47)	10 (91)	2 (100)	1 (100)
Relapse Prevention	13 (43)	3 (20)	8 (73)	1 (50)	1 (100)
12-Step	8 (27)	6 (40)	1 (9)	0 (0)	1 (100)
CRAFT	2 (7)	0 (0)	2 (18)	0 (0)	0 (0)
CBT without a Specific Gambling Manual	11 (37)	5 (33)	4 (36)	1 (50)	1 (100)
ACT	4 (13)	3 (20)	1 (9)	0 (0)	0 (0)
Treatment with a Specific Gambling Manual[b]	9 (30)	7 (47)	2 (18)	0 (0)	0 (0)
Other[c]	10 (33)	5 (33)	4 (36)	1 (50)	0 (0)
Missing	1 (3)	1 (6)	0 (0)	0 (0)	0 (0)

Note. The percentages are based on the total number of respondents from each continent, except for in the "Total"-column.
[a]Other includes directly offered support as well as referral to treatment and GA meetings (n = 1), contact with a peer support person (n = 1), motivation text messages, "warm transfer" and case management (n = 1), statewide and

national resources (n = 1), referral to treatment and training of treatment providers (n = 1), support but not counselling (n = 1), referral to resources about socioeconomic problems and self-help groups (n = 1), counselling and different kinds of therapy and social activities (n = 1), advice to school staff (n = 1), policy proposals (n = 1), counselling to CSO's (n = 1), MI and self-help (n = 1), treatment programs (n = 1). [b]Treatment with a specific gambling manual includes California Problem Gambling self-help workbook (n = 1), CBT in Time to Fold-program (n = 1), a specific manual for the TeleCounseling Program (n = 1). Some helplines did not state the name of the manual here, but wrote that they offered referral to either 12-step programs or treatment (n = 5).
[c]Other includes therapy (n = 2), the resources provided are tailored based on the client (n = 1), counselling based on CBT-principles (n = 1), economic advice (n = 1), referral to GA (n = 1).

Table 4b, **Panel B** What Do They Do? Services, Working Methods and Interventions

Online Services Offered to Individuals with PG	Total (n = 30) *n* (%)	North America (n = 16) *n* (% within area)	Europe (n = 11) *n* (% within area)	Asia (n = 2) *n* (% within area)	Oceania (n = 1) *n* (% within area)
Guided Self-Help	3 (10)	1 (13)	1 (10)	1 (50)	0 (0)
Unguided Self-Help	4 (13)	2 (25)	2 (20)	0 (0)	0 (0)
Self-Testing	13 (43)	4 (50)	6 (60)	2 (100)	1 (100)
Discussion Forum	2 (7)	1 (13)	1 (10)	0 (0)	0 (0)
Other[d]	13 (43)	7 (88)	6 (60)	0 (0)	0 (0)
Missing	7 (23)	8 (50)	1 (9)	0 (0)	0 (0)
Support Offered to CSO's	**Total (n = 30)** *n* (%)	**North America (n = 16)** *n* (% within area)	**Europe (n = 11)** *n* (% within area)	**Asia (n = 2)** *n* (% within area)	**Oceania (n = 1)** *n* (% within area)
Brief Advice	18 (86)	5 (71)	10 (91)	2 (100)	1 (100)
Counseling	16 (76)	4 (57)	9 (82)	2 (100)	1 (100)
5-Step	2 (10)	0 (0)	0 (0)	1 (50)	1 (50)
CRAFT	3 (14)	0 (0)	3 (27)	0 (0)	0 (0)
Other[e]	8 (38)	4 (57)	2 (18)	2 (100)	0 (0)
Missing	8 (27)	9 (56)	0 (0)	0 (0)	0 (0)
Prevention level of working methods	**Total (n = 30)** *n* (%)	**North America (n = 16)** *n* (% within area)	**Europe (n = 11)** *n* (% within area)	**Asia (n = 2)** *n* (% within area)	**Oceania (n = 1)** *n* (% within area)
Primary Prevention	18 (60)	6 (60)	10 (100)	2 (100)	0 (0)

Secondary Prevention	20 (67)	8 (80)	9 (90)	2 (100)	1(100)
Tertiary Prevention	18 (60)	9 (90)	6 (60)	2 (100)	1 (100)
Don't Know	1 (3)	1 (10)	0 (0)	0 (0)	0 (0)
Missing	7 (23)	6 (38)	1 (9)	0 (0)	0 (0)

Note. The percentages are based on the total number of respondents from each continent, except for in the "Total"-column. [d]Other includes website and self-exclusion (n = 1), website (n = 3), unguided and guided self-help program and information online (n = 1), information and referral (n = 4), referral and self-exclusion (n = 1), social media (n = 1), none of the above (n = 2), unguided self-help program being developed (n = 1), unsure of the question (n = 1). [e]Other includes referral to 12-step program, treatment and peer support (n = 1), 12-step and GamAnon (n = 1), referral to GamAnon (n = 1), information (n = 1), the resources provided are tailored based on the client (n = 1), reflections between individuals with PG and their surroundings (n = 1), family therapy and emotion focused therapy (n = 1), nothing (n = 1).

Collection of Client Data

Responses to the question on whether or not client data was collected showed that 23 helplines (77%) did so, while one helpline (3%) did not; six helplines (20%) did not answer this question. Of those that collected information about their clients, 48% (*n*= 11) stated that the information was reported by counsellors based on information that spontaneously came up during the conversation with the client. A total of 57% (*n* = 13) of those that collected client data did so by having counsellors ask clients specific questions during the conversation. It was less common to collect client data through surveys; of those that collected client data, 35% (*n* = 8) did so via pre-contact surveys, 22% (*n* = 5) via post-contact surveys, 13% (*n* = 3) via pre- or post-contact surveys during specific, time-limited periods, and 44% (*n* = 10) used some other method of information collection. Regarding activities aimed at measuring the outcome of their interventions, a third of the helplines (*n* = 10) measured changes in their clients' gambling behavior. A total of 43% (*n* = 13) did not measure such behavioral changes in their clients, while 23% (*n* = 7) did not answer the question.

We also asked to what extent helplines offered single, stand-alone calls, identified follow-up calls, or anonymous repeat calls, meaning that follow-up calls could not be tracked. A total of 23 helplines answered this question, where 44% only offered single, stand-alone calls, 61% offered identified follow-up calls, and 91% reported that the clients could make additional calls, but that they remained anonymous. Among the European helplines, 46% only offered their clients single, stand-alone calls, and 27% offered follow-up calls. All European helplines reported that the clients were free to make additional calls but remained anonymous. Of the North American helplines, 56% only offered single, stand-alone calls, but 89% reported that the clients were free to make additional calls while remaining anonymous. Both of the Asian helplines offered follow-up calls. One of them reported that the clients were free to make additional calls but could remain anonymous. The Oceania helpline offered follow-up calls and stated that clients were free to make additional calls but could remain anonymous.

Opening hours

Of the helplines that were open 24 hours seven days a week (24/7), all but one were North American, and one was European. Most North American helplines were open 24 hours every day, and those that were not open 24/7 were open every day of the week. Most European helplines (82%) were open Monday-Friday, either daytime only, or both daytime and evening. The Oceania helpline was open during the daytime on Monday-Friday. One of the Asian helplines was open every day during the daytime, while the other was open every day except for Sunday, both daytime and evening.

Whom Do They Reach?

As described under Data analysis above, we estimated the percentage of individuals with problem gambling who contacted helplines in each region in a two-step procedure. The estimate of the percentage of individuals from the entire population in each country, province or state calling a helpline, based on the data reported by the 23 helplines that provided numerical information on client contacts, yielded a mean overall proportion of .31% ($SD = 1.2$). Population coverage for helplines by continent was estimated at .02% ($SD = .2$) in North America ($N = 10$), .57% ($SD = 1.7$) in Europe ($N = 10$), .65% ($SD = .9$) in the two Asian regions ($N = 2$), and .03% in the one Oceania region ($N = 1$). When these estimates were divided by an average estimate of the proportion of individuals with problem gambling in the region, the results showed that, overall, about 11% of individuals with PG contacted one of the helplines in this study. See Table 5 for details by continent.

Table 5: Estimated Proportions of Gamblers Contacting a Helpline

Variable	Worldwide	North America	Europe	Asia	Oceania
Mean percentage of the population covered by the clients of the helplines[a], (*n*)	.31% (23)	.02% (10)	.57% (10)	.65% (2)	.03% (1)
Prevalences of problem gambling in the population[b] (Mean prevalence[c])	.1% - 5.8% (2.95%)	2% - 5% (3.5%)	.1% - 3.4% (1.75%)	.5% - 5.8% (3.15%)	.4% - .7% (.55%)
Proportion of the gambling problem population contacting a helpline[d]	10.5%	0.57%	32.6%	20.6%	5.5%
Interpretation[e]	Approximately 11% of the population of individuals with PG in the world contact helpline.	Slightly more than .5% of the population of individuals with PG in North America contact a helpline.	Approximately a third of the population of individuals with PG in Europe contact a Helpline.	Approximately 20% of the population of individuals with PG in Asia contact a helpline.	Approximately 6% of the population of individuals with PG in Oceania contacted the helpline in this study.

a.The mean percentages were based on the results in this study. CSO's *were* included in these proportions. See Data Analysis for the specific procedure.
b.As defined by diagnostic criteria and according to the intervals reported by Calado & Griffith (2016).
c.The mean prevalences were based on the intervals reported by Calado & Griffith (2016). CSO's *were not* included in these proportions.
d.The numbers in the first row were divided by the numbers in the second row. In other words, mean percentages of the population covered by helpline clients were divided by mean prevalences of problem gambling.
e.Since CSO's were not included in the prevalences in the second row, these interpretations of proportions of the gambling problem population contacting a helpline might be exaggerated to some extent.

Client Characteristics for All Helplines

An average of two-thirds of helpline clients were gamblers, including individuals with PG, and one third consisted of CSO's. Most helpline callers were men (70%) and an average of just over two-thirds were employed. The mean percentage of young gamblers (0-30 years), who constitute the most frequent age range among gamblers, was approximately 20%, with middle-aged gamblers (25-50 years) at approximately 55%, and senior gamblers (50+ years) around 20%. No age distribution was reported for CSO's, due to lack of data. See Table 6a.

Regarding the distribution of problematic types of gambling among gambling clients, the most prevalent were gaming machines/slots and casino. Sports betting and poker were also relatively common. Additional problematic gambling types were lottery, wagering, scratch tickets and

bingo. Four helplines also indicated the percentage of problem gambling among clients was mostly online (65%) with fewer using land-based venues (35%).

The characteristics of CSO's contacting helplines are also shown in Table 6a; the majority (about 70%) were women, and their relationship to the gambler was that of partners or parents (about 60%), with the remaining CSO's being siblings, children, and others.

Table 6a. Whom Do They Reach? Client Characteristics for All Helplines (n=30)

Client characteristic (n helplines reporting)	Prevalence in terms of mean percentage % (SD)
Type of client (n=19)	
Gamblers	67.3 (18.5)
CSO's	32.7 (18.5)
Gender Distribution for Gamblers (n=19)	
Male	69.9 (18.4)
Female	30.1 (18.4)
Age Distribution for Gamblers (n=17)	
Young (0-30 years)	18-20 (12)[a]
Middle-Aged (25-50 years)	55-56 (13-14)
Senior (50+ years)	17-20 (14-16)
Occupational Status for Gamblers (n=7)	
Employed	67.9 (18.5)
Unemployed	10.0 (7.7)
Student	4.6 (4.0)
Pensioner	7.4 (9.7)
Other[b]	10.3 (19.9)
Problematic Gambling Types for Individuals with PG (n=9)	
Gaming Machines/Slots	32.2 (33.6)
Casino	27.4 (27.3)
Sports Betting	13.0 (15.6)
Poker	7.0 (10.5)
Lottery	5.6 (8.1)
Wagering	3.7 (6.5)
Scratch Tickets	3.1 (8.6)
Bingo	.22 (.4)
Other[c]	7.6 (8.2)
Gender Distribution for CSO's (n=10)	
Male	28.8 (12.0)
Female	71.1 (11.9)
Relation to Gambler among CSO's (n=11)	
Partner	34.2 (15.1)
Parent	28.6 (12.2)
Sibling	8.9 (6.3)
Child	7.7 (9.3)
Other[d]	20.6 (19.3)

[a]The mean percentages for the three age groups are presented in intervals instead of specific numbers due to large variation in how the helplines reported their data. See Supplementary material C for further detailed information about the data analysis strategy.
[b]Other includes other (n = 2), in prison (n = 1), not working other (n = 1), financially supported by government (n = 1), disabled (n = 1), parental leave (n = 1), sick leave (n = 1).

Client Characteristics by Continent

Client characteristics by continent showed that the average proportion of gamblers was higher in North America (84%) compared to Europe (59%), with the average proportion of male gamblers higher than female gamblers at both the European and North American helplines. For the two Asian helplines, the average proportion of male gamblers was very high. Regarding age distribution among gamblers on different continents, the proportions of young and middle-aged gamblers (0-50 years) seemed higher in Europe than in North America, while the senior gamblers (50+ years) were proportionately higher in North America compared to Europe. See Table 6b.

Table 6b. Whom Do They Reach? Client Characteristics by Continent

Client characteristics	North America (n = 16)	Europe (n = 11)	Asia (n = 2)	Oceania (n = 1)
Gamblers and CSO's	Prevalence in terms of mean percentage % (*SD*)			
Gamblers	83.7 (5.7)	59.3 (12.1)	39.0 (24.0)	81.0 (0)
CSO's	16.3 (5.7)	40.7 (12.1)	61.0 (24.0)	19.0 (0)
Helplines reporting, n	7	9	2	1
Gender Distribution for Gamblers				
Male	61.9 (11.6)	73.2 (22.1)	87.5 (3.5)	-
Female	38.1 (11.6)	26.8 (22.1)	12.5 (3.5)	-
Helplines reporting, n	8	9	2	0
Age Distribution for Gamblers				
Young (0-30 years)	14 (10)	24-27 (13)	14-19 (2-8)	-
Middle-Aged (25-50 years)	48-50 (14-17)[a]	56-60 (9-12)	64-69 (6-12)	-
Senior (50+ years)	24-26 (17-21)	10-13 (3-10)	13-22 (3-10)	-
Helplines reporting, n	7	7	2	0

[a]The mean percentages for the three age groups are presented in intervals instead of specific numbers due to the large variation in how the helplines reported the data. See Supplementary material C for detailed information about the data analysis strategy.

Client Characteristics by Differing Opening Hours

Among helplines that were open on both workdays and weekends, the proportion of gamblers was slightly higher compared to helplines that were only open on workdays. The proportion of gamblers averaged 84% for helplines open 24/7, compared to helplines with more limited opening hours, where 58% were gamblers. The gender distribution among gambling clients was approximately 70% men at helplines that were open both on workdays and weekends, and at those open only on workdays. In contrast, the mean proportion of male gamblers was slightly higher at helplines not open 24 hours every day compared to those open 24/7. The pattern of CSO's relation to the gambler differed somewhat between helplines that were open both on workdays and weekends and those that were open only on

workdays, but partner relations were most common in both groups of opening hours, and parent relations were the second most common relation in both groups. In the "other" category, where all other types of relations were included, the proportion was noticeably higher for helplines that were open on both workdays and weekends compared to helplines that were only open on workdays. See Table 6c.

Table 6c. Whom Do They Reach? Client Characteristics by Opening Days and Hours

Opening days/hours// Gamblers /CSO and gender distributions	Both Workdays and Weekends (n = 20)	Workdays Only (n = 10)	24/7 (n = 13)	Other Opening Hours (n = 17)
	Prevalence in terms of mean percentage % (*SD*)			
Gamblers /CSO's				
Individuals with PG	73.2 (20.9)	60.8 (13.9)	83.7 (5.7)	57.8 (16.5)
CSO's	26.8 (20.9)	39.2 (13.9)	16.3 (5.7)	42.3 (16.5)
Number of Helplines	10	9	7	12
Gender Distribution for Gamblers				
Male	68.9 (15.4)	71.4 (23.0)	61.9 (11.6)	75.8 (20.7)
Female	31.1 (15.4)	28.6 (23.0)	38.1 (11.6)	24.2 (20.7)
Number of Helplines	11	8	8	11
Relation to Gambler among CSO's				
Partner	30.2 (19.8)	39.0 (5.0)	-	-
Parent	26.2 (15.2)	31.4 (7.9)	-	-
Sibling	5.5 (6.4)	13.0 (3.0)	-	-
Child	10.5 (12.1)	4.4 (2.9)	-	-
Other[a]	27.7 (24.4)	12.2 (4.3)	-	-
Number of Helplines	6	5	< 5	< 5

Note. For cells where n < 5, comparisons were not made.
[a]Other includes other (n = 4), ex-partner (n = 1), relative (n = 3), grandparent (n = 2), extended/other family members (n = 5), friend/acquaintance (n = 10), co-worker (n = 2), employer (n = 1), professionals (n = 2), interested person (n = 1). [c]Other includes, for example, other (n = 3), combining slot machines and sport (n = 1), dark non-official gamble (n = 1), stock marketing (n = 3), internet other (n = 2). [d]Other includes other (n = 4), ex-partner (n = 1), relative (n = 3), grandparent (n = 2), extended/other family members (n = 5), friend/acquaintance (n = 10), co-worker (n = 2), employer (n = 1), professionals (n = 2), interested person (n = 1).

Client Characteristics for Different Communication Channels Offered

The average distribution between gamblers and CSO's was approximately the same for helplines offering online chats/messages and the ones not offering this communication channel. The gender distribution was also approximately the same regardless of whether the helplines offered online chats/messages or not; most clients were men in both these groups. The proportion of gamblers was slightly higher among helplines offering SMS/text messages compared to helplines not offering this communication channel. The gender distribution among gamblers was approximately 70% men both among helplines offering SMS/text messages and those who did not. The proportion of CSO's in relation to gamblers was slightly higher

among helplines offering emails compared to those not offering emails. Finally, the proportion of female gamblers was slightly higher among helplines offering emails compared to those not offering emails. See Table 6d.

Table 6d. Whom Do They Reach? Client Characteristics by Communication Channels

Communication channels// Individuals with PG /CSO and gender distributions	Offering Online Chats/Messages		Offering SMS/Text Messages		Offering Emails	
	Yes (n = 20)	No (n = 10)	Yes (n = 13)	No (n = 17)	Yes (n = 18)	No (n = 12)
Prevalence in terms of mean percentage % (*SD*)						
Individuals with PG	68.5 (20.0)	64.8 (16.3)	73.8 (22.2)	62.6 (14.7)	64.5 (20.8)	73.5 (11.3)
CSO's	31.5 (20.0)	35.2 (16.3)	26.3 (22.2)	37.4 (14.7)	35.5 (20.8)	26.5 (11.3)
Number of Helplines	13	6	8	11	13	6
Gender Distribution for Individuals with PG						
Male	69.5 (17.7)	71.1 (22.6)	67.7 (13.8)	71.5 (21.7)	67.4 (18.8)	75.3 (17.9)
Female	30.5 (17.7)	28.9 (22.6)	32.3 (13.8)	28.5 (21.7)	32.6 (18.8)	24.7 (17.9)
Number of Helplines	14	5	8	11	13	6

Discussion

The aim of this study was to carry out an international mapping of gambling helplines. First, we investigated what the helplines do including the types of services, interventions, and communication channels offered. Secondly, we investigated whom helplines reach and the characteristics of clients who contact helplines, including the distribution between gamblers and CSO's and demographic profiles. A third aim was to explore similarities and differences by continent. Since this was an explorative study, no specific hypotheses were formulated a priori.

The study showed that the number of gambling helplines in the world is currently over 80, an increase from the 50 identified in the last known international mapping (Clifford, 2008). Among the helplines that responded to the study, all offered telephone calls as a communication

channel and most had done so for ten or more years. The most common services offered by the majority of helplines – on all continents – were treatment referral, information, and advice. We found that secondary (indicated) prevention was the most common approach. The specific interventions most commonly offered to gambling clients were MI and brief advice, while CSO's were most commonly offered brief advice and counselling. Regarding online services directly offered by helplines, self-assessment was the most common online service offered across continents. Most helplines collected data about their clients, but only about one-third measured client behavioral change. The most common opening hours were 24/7, with all but one of these helplines sited in North America.

Individuals with PG and their CSO's were the main target group, and most helplines also offered consultation services for healthcare professionals. Regarding which clients the helplines actually reached, the majority of clients were gamblers with around one-third CSO's. Most gambling clients were men and employed, while most of the CSO's were women who were partners or parents to the gambler. These findings were similar across continents in terms of opening hours and the types of communication channels offered. A comparison of helplines in North America, generally open 24/7, with those in Europe, with more limited opening hours, showed that the proportion of gamblers was higher at North American helplines compared to Europe. Finally, gambling clients' age was relatively evenly distributed in all continents.

What Do They Do?

Individuals with PG, their CSO's, and healthcare professionals were the target groups for most helplines, in line with previous literature (Clifford, 2008). Regarding communication channels, the finding that many helplines offer more than one type of communication channel also confirmed previous research (Berman, 2019; Rodda & Lubman, 2014). However, previous literature did not offer any information about the most common communication channel and how long this channel had been used, a question this study explored. Clifford's (2008) earlier mapping study found that a few helplines offered internet-based communication channels, such as emails, and that one helpline offered an online chat room. The helplines' use of internet-based communication has changed radically since then; more than half of the helplines in this sample offered online chats and emails, and two helplines offered discussion forums. This is not surprising, considering the rise in mobile devices and internet in general during the last decade (Abbott, 2017). Clifford's study also showed that more than half of the helplines offered different types of self-help; this was also the case in the current study. The typical length of client contacts was between 11 and 30 minutes, largely confirming Clifford's finding that the typical client call lasted 10 to 20 minutes.

Many helplines offer their clients information, advice and referral to external treatment, where the most frequently offered direct services by

some helplines included distance counseling and motivational support, similar to Clifford's (2008) findings. Most helplines in the current sample (77%) also reported that they collect information about their clients, which was not the case in Clifford's review, which stated that few helplines collect client data. However, only 10 helplines reported that they measured behavioral changes in their clients, to some extent in line with previous research stating that virtually no helplines measured outcomes of their interventions (Clifford, 2008). The most common opening hours were 24 hours seven days a week, similar to Clifford (2008), but only for the American helplines in this study. All in all, regarding what the helplines do, this study both confirmed and added to previous research about communication channels, direct services offered, and availability, also providing new information about the helplines' level of prevention.

This study further identified the types of interventions most commonly offered directly to gamblers and CSO's respectively, an area not previously reported on. MI was a frequently offered intervention. Considering that pathological gambling is now diagnostically classified as an addictive disorder (American Psychiatric Association, Gambling disorder, 2013), it is perhaps not surprising that MI is seen as an adequate treatment for pathological gambling as well (Josephson, 2016; Toneatto, 2016), although it was originally developed to facilitate changing problematic alcohol consumption (Miller & Rose, 2009) and is strongly characterized by its non-confrontational approach (Miller & Rollnick, 2013). Another reason for the wide use of MI among helplines could be that MI can also be used as preparation for other, more extensive treatment. Although an assessment of the overall evidence for MI as an initial complement to continued treatment has suggested low quality, individual studies evaluating MI sessions preceding further treatment have led to larger effect sizes, compared to the same treatment without the MI session (Berman, Beckman & Lindqvist, 2020; Brown & Miller, 1993). Thus, MI may be used as a method to increase treatment motivation. This MI feature may also be a reason why it is so commonly used by helplines, in addition to recognition of shame and stigma as obstacles to help-seeking (Bijker et al 2022; Hing, Holdsworth, Tiyce & Breen, 2014). MI is also well-adapted to the one-time-intervention format used by the many helplines that only offer single, stand-alone calls. Furthermore, one study has found that single-session interventions can be as effective as longer treatments for problem gambling (Toneatto, 2016).

A further interesting question is why so few helplines offered CSO's CRAFT or the 5-step method, the only evidence-based methods for CSO's included among the response options in the survey (Archer et al., 2019; Copello et al., 2010). When it comes to CRAFT, the reason for this might be that CRAFT is an extensive program with an average of 12 sessions (Archer et al., 2019), although it has been offered in five sessions as an internet-based treatment for CSO's with significant others who have problematic alcohol use, with equivocal results (Eék et al., 2020). This

might not be suitable for the helplines who mainly offer short interventions and single, stand-alone calls. The 5-step method, however, is possible to conduct as a single-session intervention (Copello et al., 2010). Furthermore, it has been found that this approach can be effectively delivered via internet (Ibanga, 2010), thereby further strengthening support for offering it as a direct helpline service.

Whom Do They Reach?

The majority of the helpline clients in this study were individuals with PG and almost all of the rest were CSO's, in line with Clifford's (2008) review. Regarding gender distribution, most clients with problem gambling were men, in agreement with the finding that being male is a risk factor for developing problem gambling (Abbot, 2017). Regarding problematic gambling forms among clients, Rodda and Lubman (2014) reported that electronic gaming machines were the most problematic gambling type for helpline clients, in agreement with current findings. The finding of a large minority of CSO helpline clients was also in line with previous research (Clifford, 2008; Dowling et al., 2014). In addition, Dowling et al. (2014) found that most of the CSO's seeking professional help at a web-based counselling service were women and romantic partners to the gambler, as in the current study.

A comparison of the helplines in Europe with those in North America showed that the proportion of gamblers served by helplines in North America was much higher than that in Europe. The proportion of gamblers compared to CSO's was also much higher among helplines that were open 24/7, compared to helplines with more limited opening hours, also when comparing all continents to North America. At the same time, it is important to emphasize that all the seven helplines in the comparison group that were open 24/7 were in North America. An interesting question is thus why a higher proportion of gamblers would contact the helplines in North America with 24/7 hours? Another interesting question is why helplines in North America are more frequently open 24/7 compared to Europe, where these opening hours seem to be unusual. A possible explanation for this might be differences in funding arrangements or life conditions between the United States and European countries. The prevalence of shift work is higher in the United States than in the European Union. In the United States the prevalence of shift workers was approximately 27% in 2015 according to a report by the Centers for Disease Control and Prevention (2015), while in the European Union, the prevalence of shift work was 17% in 2010 (Eurofound, 2012). Consequently, it may be that, compared to gamblers in Europe, gamblers in the United States work and are awake more often during irregular hours. There could thus be a greater need among the gambling population in the United States to contact a helpline during the evening and the night compared to Europe.

When it comes to the gender distribution among gamblers, a somewhat higher proportion of women contacted the helplines in North

America compared to the helplines in Europe. A higher proportion of women gamblers also contacted helplines with 24/7 opening hours compared to those with more limited fewer opening hours. Given that almost all of the helplines that were open 24/7 were North American, there could be confounding between opening hours, gender distribution and continent, where the direction of associations is currently unclear. Another interesting finding is that the gender distribution among gamblers did not necessarily depend on the communication channels offered. This was especially true regarding online chats/messaging and SMS/text messages, where the gender distribution was almost the same regardless of whether the helplines offered these communication channels or not. This suggests that the types of communication channels offered do not seem to make a noticeable difference in the gender distribution among gambling clients. To some extent, these results seem to contradict the findings regarding the Australian helpline in the study by Rodda and Lubman (2014), where online chats were more frequently used by men, while emails were most often used by women.

Overall estimates of the proportion of individuals with problem gambling who actually reached a helpline showed that approximately 11% of individuals with problem gambling overall contacted one of the helplines included in this study. In Europe, about a third of gamblers, including individuals with PG, appeared to contact a helpline. In North America, the proportion of individuals with PG contacting a helpline was significantly lower – only about half of one percent. In Asia, about one in five people with problem gambling seem to contact one of the two helplines included in this study. Regarding the only helpline from Oceania in this study, about 6% of the individuals with PG in that area seemed to contact this helpline. These results are in line with the treatment gap typical of all mental disorders (Kazdin, 2017), particularly addictive disorders (Kohn et al., 2004), and seem to largely concord with the recent review and meta-analysis findings indicating that between about 4 and 20% of individuals sought help, depending on whether they experienced moderate risk for problem gambling, or could be defined as having problem gambling (Bijker et al., 2022) according to the Problem Gambling Severity Index (Holtgraves, 2009). It is not currently clear why a larger proportion of individuals with PG would be contacting helplines in Europe; this could be due to higher population awareness of gambling risks and/or lower accessibility to treatment, as well other unknown factors.

Strengths and limitations

This study has contributed to a significant update to existing knowledge about gambling helplines on several continents, showing that helplines worldwide attract individuals with problem gambling, as well as their CSO's. The study has also mapped an aspect of direct helpline activities that has not previously been explored, namely the type of interventions offered, also differentiating between interventions offered to

individuals with problem gambling, and those offered to CSO's. A significant limitation to the study is that only 37% of the helplines identified actually responded to the survey, despite repeated reminders, both automatic and personal, and despite an offer to respond to a much shorter survey version. All continents except Africa were represented, but with overrepresentation from helplines in Europe. A similar response rate was reported by Clifford (2008), where 18 of 50 helplines (36%) reported data.

An additional general factor limiting study findings is that few helplines measure intervention outcomes, making it difficult to evaluate helpline effectiveness. One reason might be that the role of helplines has traditionally not been that of a treatment provider, but merely that of an information provider (Clifford, 2008). Even though many helplines offered much more than information at the time this study was conducted, client anonymity creates a significant challenge to gathering information about client behavior change, unless some form of concealed coding could be used to identify and contact helpline clients. Even if this were possible, it would still require client consent and trust for the helpline's confidentiality stringency, and it seems unlikely that helplines would take this step, given that anonymity seems to shield clients from the shame and fear of being judged that are emotional barriers to seeking help (Hing et al., 2014). Nonetheless, long-term follow-up has been demonstrated as possible at a national alcohol helpline in Sweden, where follow-up calls were offered, requiring clients to agree to share their contact details (Heinemans, Toftgård, Damström-Thakker, & Galanti, 2014).

Future Directions and Research

This study shed light on what gambling helplines do and whom they reach across the globe. It also generated new research questions, specifically concerning data reporting, how helplines might improve what they do and increasing helpline outreach. To improve data reporting, one suggestion is that future research could focus on gathering information from a larger number of gambling helplines, to increase accurate representation of working methods and the clients over time. An important step in this process could be to systematically map gambling helplines and their offerings every few years, with frequency depending on available resources. A possible first step could be to send out the short survey used in this study containing 11 questions to all helplines, with responding helplines asked if they would also be willing to answer a longer survey or be interviewed. Such future helpline mappings could benefit by using more uniform, standardized ways of collecting data, where a core outcome set (COS) concept could be applied, as has been proposed in the alcohol field (Shorter et al 2021). This would mean ensuring that specific standardized questions are included in data collection, without excluding variables that helplines need to prioritize for longitudinal follow-up. This could partly resolve the issue of not being able to compare all data between regions, as well as saving future researchers the time-consuming challenge of trying to fit already collected

data into new, harmonized categories without losing information. If helplines were systematically followed up and their data reporting became more consistent, additional research questions would be easier to explore.

To improve what helplines do, a key area of implementation research is how they could offer evidence-based interventions to CSO's. An initial way of exploring this would be to interview helplines that offer evidence-based interventions to CSO's and those who do not. This could provide insight into reasons for not offering evidence-based interventions, and demonstrate the multiple ways in which helplines could offer such interventions effectively. A second key question is how behavioral outcomes could be measured in helpline clients, in order to estimate helpline intervention effects. Some helplines in this study stated that they do measure client outcomes, but their methods of doing so were not explored. Future studies could focus on helplines that offer follow-up calls and explore whether client outcomes are measured, as was demonstrated in the above-mentioned alcohol helpline study (Heinemans et al., 2014). A next step would be to explore client outcomes among helplines collecting such data, possibly in a systematic review or, if possible, in a meta-analysis. Again, implementation research could be of interest if an insufficient number of helplines measure client outcomes. Involving helpline clients or individuals with former problem gambling as participants could be a crucial part of such research. An alternative method would be for helplines to at least conduct quality assurance of their methods via continuous clinical supervision and coding of client conversations with structured instruments as for Motivational Interviewing (Berman et al., 2020). Finally, a more seamless referral of helpline clients to existing treatment options would be valuable to explore. This could mean that the client would not only be referred to further treatment, but be directly connected to a treatment unit, thus linking public-health-based preventive interventions, and clinic-based treatment interventions. Examples of programs similar to this idea are the treatments for problem gambling offered via the internet by both the Finnish helpline (Peluuri Peliklinikka, 2020) and by the Swedish Addiction Centre (Beroendecentrum Stockholm, 2020).

Finally, research questions remain regarding how to increase helpline outreach. One question concerns why women who are CSO's contact helplines to a larger extent than men. Although one reason could be that partner relationships are more common among CSO's, while individuals with problem gambling are largely men, it still seems that men with other types of relationships to individuals with PG are in the minority among CSO's. One way of attaining more clarity in this question would be to compare characteristics such as gender, age, occupational status, and relation to the gambler among CSO's in the population, with characteristics among CSO's contacting the helplines. The aim of this research question would be to obtain a more accurate picture of which groups of CSO's in the population helplines might not be reaching. With this knowledge, it would be possible to explore how helplines can reach these groups. Emphasizing

men's roles as CSO's in public health messaging could be one avenue to pursue.

Conclusion

In conclusion, the number of helplines is growing in the world. Many of them offer not only information and referral to external treatment, but also direct MI and CBT interventions. The majority of their clients are gamblers, but CSO's and healthcare professionals also contact them frequently. There is an uneven gender distribution among the clients, with more men than women among gamblers, and the opposite among CSO's. This study also generated several future research questions, which could contribute to optimizing helpline services in the long-term. In sum, it seems that helplines are indeed the middle road between public health and treatment contexts, and offer a vital path to reducing the negative consequences of gambling in individuals and in the population as a whole.

Declaration of conflict of interest

No current competing interests declared. The first author was head of the Swedish Gambling Helpline 2015-2019 and is currently a member of the independent Svenska Spel AB research council, which was in no way involved in this research.

Availability of data and material

A data set will be provided on reasonable request to the corresponding author.

Author's contributions

The first and last authors conceived of the study. The two authors with joint second authorship conducted the analyses within the framework of their MSc thesis in clinical psychology, under supervision by the first author and with contributions by the last author. The first author wrote the first draft of the paper and all authors contributed revisions and approved of the final version.

Ethics and informed consent

Not required. Informed consent was collected from all the participants.

References

Abbott, M. (2017, 26-28 June). *The epidemiology and impact of gambling disorder and other gambling-related harm: Discussion paper developed for the WHO Forum on Alcohol, Drugs and Addictive Behaviours.* Geneva: World Health Organization. Retrieved from: https://www.who.int/docs/default-source/substance-use/the-epidemiology-and-impact-of-gambling-disorder-and-other-gambling-relate-harm.pdf?sfvrsn=5901c849_2

Ahmad, O. B., Boschi-Pinto, C., Lopez, A. D., Murray, C. J. L., Lozano, R., & Inoue, M. (2001). *Age standardization of rates: A new WHO standard.* (GPE Discussion Paper Series, docent number 31). Retrieved from: https://www.who.int/healthinfo/paper31.pdf

All European Academies [ALLEA]. (2018). *Den europeiska kodexen för forskningens integritet, reviderad utgåva [The European Codex for Research Integrity, revised edition].* Berlin: ALLEA – All European Academies. Retrieved Feb. 15, 2023 from: https://www.vr.se/download/18.7f26360d16642e3af99e94/1540219023679/SWALLEADen_europeiska_kodexen_f%C3%B6r_forskningens_integritet_digital%20FINAL.pdf

American Psychiatric Association. (2013). Substance-related and addictive Disorders: Gambling Disorder. *Diagnostic and statistical Manual of mental Disorders: DSM-5.* [Electronic resource] (Fifth edition. ed.) Arlington, VA: American Psychiatric Association. Retrieved Feb. 15, 2023 from https://dsm.psychiatryonline.org/doi/book/10.1176/appi.books.9780890425596

American Public Health Association. (2020). *What is public health?* Retrieved 2020-01-08, from https://www.apha.org/what-is-public-health

Arborelius, L. (2016). *Neurofarmakologi för Psykologer, Psykoterapeuter och Beteendevetare [Neuropharmacology for Psychologists, Psychotherapists and Behavioral Scientists].* Stockholm: Natur & Kultur.

Archer, M., Harwood, H., Stevelink, S., Rafferty, L., & Greenberg, N. (2019). Community reinforcement and family training and rates of treatment entry: a systematic review. *Addiction, (Abingdon, England).* https://doi.org/10.1111/add.14901

Berman, A. H. (2019). *Stödlinjens årsrapport för 2018.* Stockholm: Centrum för psykiatriforskning/Center for psychiatry research. Retrieved from: http://dok.slso.sll.se/CPF/Stodlinjen/Stodlinjens_arsrapport_2018.pdf

Berman, A.H., Beckman, M. & Lindqvist, H. (2020). Chapter 45: Motivational Interviewing interventions. In: M. S. Hagger, L. D. Cameron, K. Hamilton, N. Hankonen, & T. Lintunen (Eds.). *Handbook of Behavior Change.* New York, NY: Cambridge University Press, pp. 661-676. https://doi.org/10.1017/97811086773180.045

Beroendecentrum Stockholm [Stockholm Addiction Center], Region Stockholm. (2020). *Spelprogrammet - behandling via nätet.* Retrieved Feb 15, 2023 from: https://www.beroendecentrum.se/vard-hos-oss/behandling-via-natet/spel---behandling-via-natet/

Bijker, R., Booth, N., Merkouris, S. S., Dowling, N. A., & Rodda, S. N. (2022). Global prevalence of help-seeking for problem gambling: A systematic review and meta-analysis. *Addiction*, *117*(12), 2972-2985. https://doi.org/10.1111/add.15952

British Columbia's Central Statistical Agency (2020). *Quarterly population highlights.* (Issue number 19-04). Retrieved from: https://www2.gov.bc.ca/assets/gov/data/statistics/people-population-community/population/population_highlights_2019q4.pdf

Brown, J. M., & Miller., W. R. (1993). Impact of Motivational Interviewing on participation and outcome in residential alcoholism treatment. *Psychology of Addictive Behaviors, 7*(4), 211-218. https://doi.org/10.1037/0893-164X.7.4.211

Browne, M., Bellringer, M., Greer, N., Kolandai-Matchett, K., Rawat, V., Langham, E., Rockloff, M., Palmer Du Preez, K., & Abbott, M. (2017a). *Measuring the burden of gambling harm in New Zealand*. (Report developed for the New Zealand Ministry of Health). Queensland and Auckland: Central Queensland University's Experimental Gambling Research Laboratory and Auckland University of Technology's Gambling and Addictions Research Centre. Retrieved from: https://www.health.govt.nz/publication/measuring-burden-gambling-harm-new-zealand

Browne, M., Greer, N., Rawat, V., & Rockloff, M. (2017b). A population-level metric for gambling-related harm. *International Gambling Studies, 17*(2), 163-175. https://doi.org/10.1080/14459795.2017.1304973

Calado, F., & Griffiths, M. D. (2016). Problem gambling worldwide: an update and systematic review of empirical research (2000-2015). *Journal of Behavioral Addictions, 5*(4), 592-613. https://doi.org/10.1556/2006.5.2016.073

Centers for Disease Control and Prevention, National Center for Health Statistics (2020-04-03). *Work Organization Characteristics Charts*. NIOSH Worker Health Charts. Retrieved from: https://wwwn.cdc.gov/NIOSH-WHC/chart/ohs-workorg?OU=*&T=OU&V=R

Clifford, G. (2008). The evolution of problem gambling helplines. In M. Zangeneh, A. Blaszczynski & N. Turner (Eds.), *In the Pursuit of Winning: Problem Gambling Theory, Research and Treatment*. (291-312). New York: Springer.

Committee on the Social and Economic Impact of Pathological Gambling, National Research Council (1999). *Pathological gambling: A critical Review*. [Electronic resource]. Washington, DC: National Academy Press. Retrieved from: https://books.google.se/books?hl=sv&lr=&id=8PObAgAAQBAJ&oi=fnd&pg=PT13&ots=CKDeZ36VGz&sig=cLPIhBMnFhSQS3WHBGspC2IfE&redir_esc=y#v=onepage&q&f=false

Copello, A., Templeton, L., Orford, J., & Velleman, R. (2010). The 5-Step method: principles and practice. *Drugs: Education, Prevention and Policy, 17*(sup1), 86-99. https://doi.org/10.3109/09687637.2010.515186

Cowlishaw, S., Merkouris, S., Dowling, N., Anderson, C., Jackson, A., & Thomas, S. (2012). Psychological therapies for pathological and problem gambling. *Cochrane Depression, Anxiety and Neurosis Group*, *11*(11), CD008937. https://doi.org/10.1002/14651858.CD008937.pub2

Dixon, M. R., Wilson, A. N., & Habib, R. (2016). Neurological evidence of acceptance and commitment therapy effectiveness in college-age gamblers. *Journal of Contextual Behavioral Science, 5*(2), 80-88. https://doi.org/10.1016/j.jcbs.2016.04.004

Dowling, N. A., Rodda, S. N., Lubman, D. I., & Jackson, A. C. (2014). The impacts of problem gambling on concerned significant others accessing web-based counselling. *Journal of Gambling Studies., 39*(8), 1253-1257. https://doi.org/10.1016/j.addbeh.2014.04.011

Echeburúa, E., Fernández-Montalvo, J., & Báez, C. (2000). Relapse prevention in the treatment of slot-machine pathological gambling: long-term outcome. *Behavior Therapy, 31*(2), 351-364. https://doi.org/0.1016/S0005-7894(00)80019-2

Eék, N., Romberg, K., Siljeholm, O., Johansson, M., Andreasson, S., Lundgren, T., Fahlke, C., Ingesson, S., Bäckman, L. & Hammarberg, A. (2020). Efficacy of an internet-based

community reinforcement and family training program to increase treatment engagement for AUD and to improve psychiatric health for CSOs: A randomized controlled trial. Alcohol and Alcoholism, 55(2), 187-195. https://doi.org/10.1093/alcalc/agz095

Eurofound. (2012). *Fifth European working conditions survey.* Luxembourg: Publications Office of the European Union. DOI: 10.2806/34660. Retrieved from: https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef1182en.pdf

Heinemans, N., Toftgård, M., Damström-Thakker, K., & Galanti, M. R. (2014). An evaluation of long-term changes in alcohol use and alcohol problems among clients of the Swedish National Alcohol Helpline [journal article]. *Substance Abuse Treatment, Prevention, and Policy*, *9*(1), 22. https://doi.org/10.1186/1747-597x-9-22

Hing, N., Holdsworth, L., Tiyce, M., & Breen, H. (2014). Stigma and problem gambling: Current knowledge and future research directions. International Gambling Studies, 14(1), 64-81. https://doi.org/10.1080/14459795.2013.841722

Holtgraves, T. (2009). Evaluating the Problem Gambling Severity Index. *Journal of gambling studies*, *25*(1), 105-120. https://doi.org/10.1007/s10899-008-9107-7

Ibanga, A. (2010). Web-based 5-Step method for affected family members. *Drugs: Education, Prevention and Policy, 17*(sup1), 129-153. doi:10.3109/09687637.2010.514810

IBM. (2020). *SPSS.* https://www.ibm.com/analytics/spss-statistics-software

Josephson, H. (2016). *Motivational Interviewing (MI) and cognitive behavioral group therapy in the treatment of gambling disorder: efficacy, sensitivity to contemporary alcohol problems, and processes in MI.* (Thesis for Doctoral Degree, Karolinska Institutet, Stockholm). Retrieved from: https://openarchive.ki.se/xmlui/bitstream/handle/10616/45249/Thesis_Henrik_Josephson.pdf?sequence=1&isAllowed=y

Lag om etikprövning av forskning som avser människor. SFS 2003:460. Stockholm: Utbildningsdepartementet. Retrieved from: https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2003460-om-etikprovning-av-forskning-som_sfs-2003-460

Kazdin, A. E. (2017). Addressing the treatment gap: a key challenge for extending evidence-based psychosocial interventions. *Behaviour Research and Therapy, 88*, 7–18. https://doi.org/10.1016/j.brat.2016.06.004

Kohn, R., Saxena, S., Levav, I., & Saraceno, B. (2004). The treatment gap in mental health care. *Bulletin of the World Health Organization, 82*(11), 858 - 866. World Health Organization. https://doi.org/10665/269274

Kraan, A. E. M., Dijkstra, B. A. G., & Markus, W. (2018). Treatment delivery of the community reinforcement approach in outpatient addiction treatment. *Evaluation and Program Planning, 70*, 61-66. https://doi.org/10.1016/j.evalprogplan.2018.05.004

McCarthy, S., Thomas, S. L., Bellringer, M. E., & Cassidy, R. (2019). Women and gambling-related harm: a narrative literature review and implications for research, policy, and practice. *Harm Reduction Journal*, *16*(18). https://doi.org/10.1186/s12954-019-0284-8

Miller, W. R., & Rollnick, S. (2013). *Motivational Interviewing: Helping People Change* (3rd ed.). Guilford.

Miller, W. R., & Rose, G. S. (2009). Toward a theory of Motivational Interviewing. *American Psychologist, 64*(6), 527-537. https://doi.org/10.1037/a0016830

Mirghani, H., Jung, A. C., & Fakhry, C. (2017). Primary, secondary and tertiary prevention of human papillomavirus-driven head and neck cancers. *European Journal of Cancer, 78*, 105-115. https://doi.org/10.1016/j.ejca.2017.03.021

Molander, O., Wennberg, P. & Berman, A.H. (2021**).** The Gambling Disorders Identification Test (GDIT): Psychometric Evaluation of a New Comprehensive Measure for Gambling Disorder and Problem Gambling. *Assessment.* https://doi.org/*10.1177/10731911211046045*

Nationalencyklopedin [Swedish National Encylopedia) (2020). *Förebyggande hälso- och sjukvård [Preventive healthcare]* Retrieved Jan. 1, 2020 from http://www.ne.se/uppslagsverk/encyklopedi/lång/förebyggande-hälso-och-sjukvård

Peluuri Peliklinikka (2020). *The Time to Fold.* Retrieved from: https://peluuri.fi/en/gamblers/peluuris-nationwide-services-gamblers/time-fold-peli-poikki

Petry, N. M., Ammerman, Y., Bohl, J., Doersch, A., Gay, H., Kadden, R., Molina, C., & Steinberg, K. (2006). Cognitive-Behavioral therapy for pathological gamblers. *Journal of Consulting and Clinical Psychology, 74*(3), 555-567. https://doi.org/10.1037/0022-006X.74.3.555

Petry, N. M., Stinson, F. S., & Grant, B. F. (2005). Comorbidity of DSM-IV Pathological gambling and other psychiatric disorders: results from the national epidemiologic survey on alcohol and related conditions. *The Journal of Clinical Psychiatry, 66*(5), 564-574. https://doi.org/10.4088/JCP.v66n0504

Planzer, S., Gray, H. M., & Shaffer, H. J. (2014). Associations between national gambling policies and disordered gambling prevalence rates within Europe. *International Journal of Law and Psychiatry, 37*(2), 217-229. https://doi.org/10.1016/j.ijlp.2013.11.002

Province of British Columbia (2016). *Tertiary prevention.* Retrieved Jan. 8, 2020, from https://www.healthlinkbc.ca/physical-activity/tertiary-prevention

Qualtrics LCC, Q. (2020). *Qualtrics^{xm}.* In (Version Core XM) https://www.qualtrics.com/core-xm/survey-software/

Rash, C. J., & Petry, N. M. (2014). Psychological treatments for gambling disorder. *Psychology Research and Behavior Management, 7*, 285-295. https://doi.org/10.2147/PRBM.S40883

Rash, C. J., Weinstock, J., & Van Patten, R. (2016). A review of gambling disorder and substance use disorders. *Substance Abuse and Rehabilitation, 7*, 3-13. https://doi.org/10.2147/SAR.S83460

Rodda, S., & Lubman, D. I. (2014). Characteristics of gamblers using a national online counselling service for problem gambling. *Journal of Gambling Studies, 30*(2), 277-289. https://doi.org/10.1007/s10899-012-9352-7

Shorter, G. W., Bray, J. W., Heather, N., Berman, A. H., Giles, E. L., Clarke, M., ... & Newbury-Birch, D. (2021). The "outcome reporting in brief intervention trials: Alcohol"(orbital) core outcome set: International consensus on outcomes to measure in efficacy and effectiveness trials of alcohol brief interventions. Journal of studies on alcohol and drugs, 82(5), 638-646. https://doi.org/10.15288/jsad.2021.82.638

Statistisches Bundesamt (Destatis) (2020). *Statistische Ämter des Bundes Und Der Länder. Gemeinsames Statistikportal.* Retrieved from: https://www.statistikportal.de/de/bevoelkerung/flaeche-und-bevoelkerung

Swedish Public Health Agency (2016). *Spel om pengar och spelproblem i Sverige 2008/2009 [Gambling and problem gambling in Sweden 2008/2009]* (Issue number: 16132). Retrieved from: https://www.folkhalsomyndigheten.se/contentassets/f097a1d6520f4c3f902d5bc71ab0da9a/r2010-23-spel-om-pengar-o-spelproblem.pdf

Swedish Public Health Agency (2018). *Spelproblem påverkar både spelare och närstående negativt [Problem gambling negatively influence both gamblers and concerned significant others].* (Issue number: 18084-2). Retrieved October 8, 2019 from https://www.folkhalsomyndigheten.se/contentassets/f3cabb24b7924bbb9f92b1c6a0a8b8b3/spelproblem-paverkar-bade-spelaren-narstaende-negativt.pdf

Swedish Public Health Agency (2019a). *Spelprevention.se - Kunskap för dig som förebygger spelproblem [Spelprevention.se – Information for professionals in gambling problem prevention].* Retrieved Jan. 7, 2020 from https://www.folkhalsomyndigheten.se/spelprevention/

Swedish Public Health Agency (2019b). *Resultat från Swelogs 2018 [Swelogs Outcomes 2018].* Retrieved Dec. 8, 2022 from https://www.folkhalsomyndigheten.se/globalassets/livsvillkor-levnadsvanor/andts/spel/swelogs/resultat-swelogs-2018-2019.pdf

Swedish Public Health Agency (2020a, 7 May). *Spelandet i Sverige [Gambling in Sweden].* Retrieved from: https://www.folkhalsomyndigheten.se/spelprevention/statistik/spelande/

Swedish Public Health Agency (2020b, 19 May). *Statistik över spelproblem i Sverige.* Retrieved 2022-12-08 from https://www.folkhalsomyndigheten.se/spelprevention/statistik/spelproblem.

The Swedish Research Council. (2017-11-07). *The act concerning the ethical review of research involving humans.* Retrieved from: https://www.kliniskastudier.se/english/for-researchers/laws-regulations/act-concerning-ethical-review-research-involving-humans--.html

Toneatto, T. (2016). Single-session interventions for problem gambling may be as effective as longer treatments: results of a randomized control trial. *Addictive Behaviors*, *52*, 58–65. https://doi.org/10.1016/j.addbeh.2015.08.006

United States' Census Bureau; U.S. Department of Commerce (2019). *QuickFacts*. Retrieved from: https://www.census.gov/quickfacts/fact/table/MA,OK,MN,FL,KY,DE/PST045219

Wall, H., Berman, A.H., Tolchard, B., Jayaram-Lindström, N., Hellner, C. & Rosendahl, I. (2020). Gambler Subtypes and Level of Problem Gambling Severity: A Cluster Analysis of Swedish Gamblers Using an Online Problem Gambling Screener. *Psychology of Addictive Behaviors*. *https://doi.org/10.1037/adb0000674*

World Medical Association. (2018, 9 July). *WMA Declaration of Helsinki – Ethical principles for medical research involving human subjects.* Retrieved from: https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/

Worldometer. (2020). *Population by country.* https://www.worldometers.info/world-population/population-by-country/