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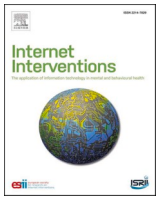

Who are frequent chatters? Characterization of frequent users in a 24/7 messenger-based psychological chat counseling service for children and adolescents

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ABSTRACT

Background: Online helplines have shown a high acceptance, feasibility, and usability, especially with young people. Helplines usually aim to provide one-time crisis intervention; however, there are users who frequently use such services, tying a disproportionately large proportion of service capacities. To date, there is no research on the characterization of frequent users of online helplines. Therefore, the aim of the present study is to characterize frequent chatters in a chat-based counseling context.

Methods: This cross-sectional study retrospectively analyzed anonymous data of users who approached the German messenger-based psychological chat counseling service *krisenchat* between May 2020 and July 2021 ($N = 6657$), with a focus on frequent users - the "frequent chatters". Frequent chatters were defined as those who received an above average ($M + 2 * SD$) amount of messages from counselors over a period of one week and had at least 7 days of contact with the service over the entire data collection period. Chi-square-tests and Mann-Whitney-*U* tests were conducted to identify differences between frequent users and the population of all users.

Results: In total, $n = 99$ (1.5 %) users met the definition for frequent chatters and accounted for roughly a tenth (9.85 %) of all chats of the service. The mean frequent chatter was 17 years old ($M = 17.29$, $SD = 3.56$), female ($n = 78$, 82.1 %), and approached the service in the late afternoon ($M = 5{:}00$ pm, $SD = 5{:}25$ h). Compared to the general user population, frequent chatters reported significantly more severe concerns to counselors, of which 81.8 % included psychiatric symptoms, such as suicidality (43.4 %) and non-suicidal self-injury (41.4 %). In addition, frequent chatters were significantly more likely to contact *krisenchat* alongside the use of other professional help services. Further, frequent chatters wrote significantly longer and more messages during the counseling process and within a session than the general user population of *krisenchat*. Compared to the general user population, frequent chatters did not differ in their satisfaction with the service.

Conclusion: Frequent users are known from telephone helplines and are also represented in a chat-based context. Compared to the general user population, they are more likely to report serious mental health conditions and half of them currently receive professional help, suggesting a high need for social support. In light of the increasing development of chat-based helplines, there is a need for further research on frequent chatters to develop tailored counseling strategies for their needs and to analyze options for an optimized service provision.

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1. Introduction

Due to the rising use of smartphones, text messaging has become a very popular, if not the primary mode of communication for today's adolescents and young people (Lenhart et al., 2015). Adolescents view text messaging via mobile phones or smartphones as a rapid, easy, convenient, playful, and economical way of communicating (Agosto et al., 2012; Church and de Oliveira, 2013; Blair et al., 2015; Yoon et al., 2015). Children, adolescents, and young adults use the internet also to seek help for mental health issues because it is familiar, easy accessible, provides anonymity, and additionally meets their need for independence and autonomy (Gowen, 2013; Best et al., 2016; Pretorius et al., 2019). Additionally, adolescents seem to prefer texting over talking to convey important issues (Zøllner et al., 2013; Predmore et al., 2017). In accordance with this trend, a growing number of helplines have begun to offer online services like chat or email counseling in addition to telephone service (Perry et al., 2016; Mokkenstorm et al., 2017; Predmore et al., 2017; Gould et al., 2021). Recent studies demonstrate the acceptance, feasibility, and usability of such services, especially by young people (Pretorius et al., 2019; Eckert et al., 2022). Whether by phone or text message, the aim of helplines targeted at youth is to provide timely assistance, on-off or time-limited, with confidential access to someone who listens, relieves a crisis, and suggests more specialized and professional help services (Barber et al., 2004; Kalafat et al., 2007; Sindahl and van Dolen, 2020).

Regarding the utilization behavior of helplines, studies have shown that while the majority of users utilize the services in the intended way (i.e., with only one or few contacts), a small percentage of users make numerous calls to helplines, which are referred to as chronic, repeat, multiple, or frequent callers in the literature (Kalafat et al., 2007; Middleton et al., 2014, 2016; Pirkis et al., 2016). In the current literature, which focuses exclusively on telephone-based helplines, frequent users are mostly defined as users who call more than once or a certain number of times during a specified time period (Middleton et al., 2014, 2016; Pirkis et al., 2016). For example, the Australian helpline *Lifeline* identified users who called 20 times or more per month as “frequent callers”. Notably out of all callers, only about 3 % were identified as frequent callers and yet they accounted for 60 % of all calls within a period of two years (Pirkis et al., 2016). These findings suggest that frequent users of helplines tie disproportionately more capacities than all other users who contact the service.

In addition, it remains unclear what kind of support frequent callers are seeking, because they do not always seem to have an immediate crisis (Kinzel and Nanson, 2000; Gilat and Rosenau, 2011). The frequent utilization pattern of helplines is often considered inappropriate and frustrating by service providers (Gilat and Rosenau, 2011). However, strategies such as limiting the accessibility of the service to frequent users lead to further concerns, as such strategies may cause further crises (Kinzel and Nanson, 2000; Mishara et al., 2007; Middleton et al., 2014). This concern seems justified, considering the fact that many frequent callers are currently undergoing or have a history of psychiatric treatment (Burgess et al., 2008; Middleton et al., 2014). Overall, current service models do not seem to meet the needs of frequent users, and recommendations for a tailored counseling service for this subgroup of users are lacking.

Due to the comparatively recent development of chat-based counseling services, as of yet, no research is available on frequent users of these services – the “frequent chatters”. Therefore, the aim of this study was to characterize frequent chatters in a chat-based counseling context regarding sociodemographic aspects, chat topics, utilization behavior, and satisfaction with the service. For this purpose, data obtained from users of *krisenchat*, a German messenger-based psychosocial chat counseling service (Eckert et al., 2022), was analyzed. Based on the literature (Spittal et al., 2015; Pirkis et al., 2016), it was hypothesized that compared to the general user population of *krisenchat*, frequent chatters would be more likely to contact *krisenchat* due to psychiatric symptoms and would be more likely to currently receive psychiatric treatment.

2. Methods

2.1. Participants and procedure

Anonymized data of all users of *krisenchat* were extracted from the database. Those data were collected in the period from May 17, 2020 to July 30, 2021. The data included metadata about each chat, such as time of first approach, number of sessions, messages, and words. In addition, information on each chat user (e.g., concerns or problems, age, or gender) was collected by the counselors. Further, users whose chats contained a minimum of 30 messages and had no indication for specialized counseling, e.g., due to child welfare endangerment, were invited via link to participate in a subsequent user satisfaction survey 6 h after their first counseling session. The survey was conducted via the online survey-tool *typeform* (https://www.typeform.com) and all participants provided informed consent via opt-in-question prior to the survey. Ethical approval was granted by the ethics board of the Medical Faculty, University of Leipzig (372/21-ek).

Data of $N = 11{,}031$ users was collected in the above-mentioned period. After data cleaning and exclusion of users (e.g., because of age under 6 or over 25, no indication for counseling, etc.; all criteria and data cleaning procedure can be found in (Eckert et al., 2022), data of $n = 6692$ (63.1 %) remained. Of those, additional $n = 305$ (2.8 %) cases were excluded because they were identified as at-risk of child welfare endangerment and thus received more counseling sessions, resulting in a more frequent use. Hence, data of $n = 6657$ (60.3 %) users were analyzed. Of this final sample, $n = 2639$ (43.2 %) completed the survey.

2.2. Measures

2.2.1. Definition of frequent chatters

When establishing a definition of frequent chatters, several possible difficulties arising from the asynchronous modality of messenger-based counseling have to be taken into account. Due to the nature of texting, using the frequency of contact with the counseling service to define frequent chatters seems inappropriate, as defining what exactly constitutes one point of contact in the context of texting (with sometimes longer time periods between text message responds) is a problem in and of itself. According to the in-house definition of *krisenchat*, a chat session is a series of messages sent by a *krisenchat* user with less than 12 h between consecutive messages (Eckert et al., 2022). Definitions from studies on telephone-based helplines (e.g., defining frequent callers as those calling 20 or more times a month (Pirkis et al., 2016) are therefore hardly transferable into the context of chat counseling. Thus, instead we chose to tie the definition of frequent chatters to the intensity of input and care needed from the counseling service. However, the asynchronous format of *krisenchat*'s service makes it difficult to capture the need for care via time (required on the counselor's side). Further, utilizing the average of absolute word count might lead to misclassification of users depending on the point of time they first sought contact with *krisenchat* with regard to the survey period.

Given these considerations, the definition of frequent chatters for this study was based on the average amount of words received, averaged over a period of one week (i.e., seven days). To avoid artificial inflation of the word count, users that were in contact with *krisenchat* for less than seven days were excluded in the calculation of the averaged word count. In reference to simple univariate outlier detection, we utilized the comparatively conservative definition of outliers as cases two standard deviations above the sample mean (Cousineau and Chartier, 2010) to classify frequent chatters. Thus, frequent users were classified as those who received an above average ($M + 2 * SD$) amount of written words from counselors over an averaged period of one week and had at least 7 days of contact with *krisenchat* over the entire data collection period.

2.2.2. Utilization

The formal characteristics of each chat counseling (e.g., time of first approach, number of messages, and words of users and counselors) were automatically collected as metadata. In addition, counselors documented information shared by and about the users (e.g., age, gender, concerns identified during counseling, current use of professional help services). Users' concerns or problems were aggregated into 7 chat topics (psychiatric symptoms, psychosocial distress, emotional distress, sexual harassment, violence, LGBTQIA+, and COVID-19; see (Eckert et al., 2022) for further details). Further data, such as whether they had already used professional support services, were collected within the subsequent user satisfaction survey.

2.2.3. User satisfaction

Two items were used to assess user satisfaction following the initial chat counseling session. On a 5-point Likert scale, users were first asked whether they considered the counseling helpful. Users were requested to rate their likelihood of recommending *krisenchat* to others using Net Promoter Score (NPS; (Reichheld, 2003) within the second item. After that, a binary variable was created from this likelihood of recommending, with the assumption that a score of 6 or higher indicated a recommendation.

2.3. Statistical analysis

IBM SPSS Statistics version 27.0 was used to conduct the statistical analysis. The statistical analysis was conducted with a two-tailed $\alpha = 0.05$. Sociodemographic factors, information on usage patterns, and user satisfaction were initially assessed in a descriptive manner. Chi-square-tests were then used to determine differences between frequent chatters and the general user population (i.e., sociodemographic characteristics: gender, age group, time of first approach, current or prior use of professional help services, utilization patterns: number of concerns (categorical), chat topics, and user satisfaction: recommendation rate). The effects of significant chi-square tests were decomposed using the Standardized Pearson Residuals. The φ-coefficient was used to rate the effect size, while Cramér's V (φ_c) was considered once the contingency table was larger than 2 × 2. Effect sizes were interpreted as φ, $\varphi_c = 0.10$ small, φ, $\varphi_c = 0.30$ medium, and φ, $\varphi_c = 0.50$ large effects (Ellis, 2010). Because of the non-normal distribution of the continuous utilization variables (i.e., number of concerns, number of words and messages, mean number of messages per session, mean number of words used per message) and continuous satisfaction variables (i.e., age and user satisfaction)Mann-Whitney-U tests were used to compare frequent chatters and the general user population of *krisenchat*. Effect sizes of Mann-Whitney-U tests were interpreted as $r = 0.10$ small, $r = 0.30$ medium, and $r = 0.50$ large effect sizes (Ellis, 2010; Field, 2018). Bonferroni correction was used n to account for multiple testing.

3. Results

3.1. Frequent chatters

Considering only these users that had been in contact with *krisenchat* over a period of at least seven days during the time period of data collection ($n = 3450$, 52.8 %%), the mean amount of words a user received from counselors was $M = 272.68$ ($SD = 461.05$). Thus, according to the definition of frequent chatters used in this study, users who received an average of at least $n = 1195$ words per week ($M + 2 * SD$) were classified as frequent chatters. In the present sample, $n = 99$ (1.5 %) users met the definition of frequent chatters. In total, the subgroup of frequent chatters received $n = 1,029,265$ (9.9 %) words from counselors, while those not classified as frequent chatters received $n = 9,417,320$ (90.2 %) words.

3.2. Sociodemographic variables

A detailed description of sociodemographic characteristics of frequent chatters (n = 99, 1.5 %) and the general user population of *krisenchat* ($n = 6558$, 98.5 %), respectively, is displayed in Table 1. The mean frequent chatter was 17 years old ($M = 17.29$, $SD = 3.56$), female ($n = 98$, 84.5 %), and approached *krisenchat* at $M = 5{:}00$ pm ($SD = 5{:}25$ h). Of all frequent chatters, nearly half ($n = 45$, 45.5 %) approached the service between 4 pm and 8 pm, followed by one-third ($n = 29$, 29.3 %) who approached the service between 8 pm and midnight. About half of all frequent chatters ($n = 23$, 57.1 %), who disclosed their prior treatment history, had used professional help services prior to the use of *krisenchat*. Similarly, nearly half of all frequent chatters ($n = 42$, 42.4 %) were currently in use of professional help services. Overall, $n = 14$ (14.1 %) frequent chatters reported both a history of as well as current use of professional help services.

Compared to the general user population, subgroup analyses indicated significant differences in terms of the time of first approach with the service, $\chi^2(5) = 13.44$, $p = .03$, $\varphi_c = 0.04$. Frequent users first approached the messenger-based counseling service significantly more often between 4 pm and 8 pm, while they contacted significantly less often during early hours, i.e., between 8 am and noon, than the general user population. Also, frequent chatters were more likely to be currently in treatment than the general user population of *krisenchat*, $\chi^2(1) = 31.49$, $p < .001$, $\varphi = 0.07$. Further, frequent chatters differed significantly from the general user population of the counseling service in terms of age group, $\chi^2(2) = 6.24$, $p = .044$, $\varphi_c = 0.03$. Thus, users in the

Table 1
Sociodemographic characteristics and group comparison of frequent chatters and to the general user population of *krisenchat*.

Variable	Frequent chatters (n = 99)	General user population of *krisenchat* (n = 6558)	Test statistic χ^2	Effect size φ, φ_c
Gender, *n* (%)			0.62	0.01
Female	78 (82.1 %)	4667 (83.3 %)		
Male	16 (16.2 %)	833 (14.9 %)		
Diverse	1 (1.1 %)	103 (1.8 %)		
Age group, *n* (%)			6.24*	0.03
7 to 13 years	11 (11.1 %)	1214 (18.5 %)		
14 to 17 years	44 (44.4 %)	3117 (47.5 %)		
18 to 25 years	44 (44.4 %)	2227 (34.0 %)		
Time of first approach, *n (%)*			13.44*	0.04
4 am–8 am	4 (3.0 %)	263 (4.0 %)		
8 am–12 pm	2 (2.0 %)	745 (11.4 %)		
12 pm–4 pm	14 (14.1 %)	1166 (17.8 %)		
4 pm–8 pm	45 (45.5 %)	2143 (32.7 %)		
8 pm–12 am	29 (29.3 %)	1843 (28.1 %)		
12 am–4 am	6 (6.1 %)	397 (6.1 %)		
Current treatment, *n (%)*	42 (42.4 %)	1291 (19.7 %)	31.49***	0.07
Prior use of professional help services[a], *n (%)*	23 (57.1 %)	1110 (52.3 %)	0.39	0.01

Variable	Frequent chatters (n = 99)	General user population of *krisenchat* (n = 6558)	Test statistic U	Effect size r
Age, *M (SD)*	17.29 (3.56)	16.65 (3.47)	290,636.00	0.02

Notes. χ^2, chi-square-test statistic; φ, phi-coefficient; φ_c, Cramér's V; U, Mann-Whitney-U test statistic; r, effect size. Calculation of % from valid cases.
* $p < .05$.
*** $p < .001$.
[a] Calculation of % from chatters who disclosed their prior treatment history (n = 50).

age group between 18 and 25 were significantly more likely to be frequent chatters. No significant associations were found between meeting the definition of a frequent chatter and gender, $\chi^2(2) = 0.58$, $p = .750$; age, $U = 290{,}636.00$, $p = .072$; or the prior use of professional help services, $\chi^2(1) = 0.39$, $p = .532$ (see Table 1).

3.3. Utilization

A detailed description of chat topics, utilization patterns, and user satisfaction is displayed in Table 2. Frequent chatters wrote significantly more messages and more words than the general user population of *krisenchat* during the whole counseling process, and sent significantly more messages on average within a chat session and more words on average within a message (all $p < .001$).

On average, frequent chatters addressed significantly more severe concerns ($M = 2.11$, $SD = 1.34$) within the counseling process than the general user population of the service, $U = 238{,}313.50$, $p < .001$, $r = 0.06$. When looking at the specific number of concerns, they were more likely to address 4 or more concerns, while the general user population of *krisenchat* were more likely to address one concern, $\chi^2(6) = 225.55$, $p < .001$, $\varphi_c = 0.18$.

The most frequently addressed topics of frequent chatters were psychiatric symptoms ($n = 79$, 79.8 %), followed by psychosocial distress ($n = 39$, 38.4 %) and emotional distress ($n = 37$, 37.4 %). Within the category of psychiatric symptoms, suicidality ($n = 43$, 43.4 %), followed by non-suicidal self-injury (NSSI; $n = 41$, 41.4 %), depression

Table 2
Chat topics and utilization patterns: group comparison of frequent chatters and the general user population of *krisenchat*.

Variable	Frequent chatters ($n = 99$)	General user population of *krisenchat* ($n = 6558$)	Test statistic	Effect size
			χ^2	φ, φ_c
Number of concerns or problems, *n* (%)			225.55***	0.18
1	42 (42.4 %)	4156 (63.4 %)		
2	29 (29.3 %)	1756 (26.8 %)		
3	14 (14.1 %)	519 (7.9 %)		
4	7 (7.1 %)	109 (1.7 %)		
5	4 (4.0 %)	17 (0.3 %)		
6	2 (2.0 %)	1 (0.0 %)		
7	1 (1.0 %)	0 (0.0 %)		
Chat topics, *n* (%)				
Psychiatric symptoms	79 (79.8 %)	2623 (40.0 %)	15.96***	0.05
Depression	27 (27.3 %)	1495 (22.8 %)	1.11	0.01
Suicidality	43 (43.4 %)	1319 (20.1 %)	32.60***	0.07
NSSI	41 (41.4 %)	1321 (20.1 %)	27.12***	0.06
Anxiety	24 (19.8 %)	1063 (16.2 %)	2.59	0.02
Addictive behavior	3 (3.0 %)	136 (2.1 %)	0.44	0.01
Eating disorder	5 (5.1 %)	320 (4.9 %)	0.01	0.001
Obsessive-compulsive behavior	1 (1.0 %)	71 (1.1 %)	0.01	0.001
Flashbacks	2 (2.0 %)	94 (1.4 %)	0.24	0.01
Psychosocial distress	38 (38.4 %)	2139 (32.6 %)	1.47	0.02
Family-related problems	21 (22.2 %)	1048 (16.0 %)	1.98	0.03
Bullying	6 (6.1 %)	309 (4.7 %)	0.39	0.01
School-related problems	4 (4.0 %)	540 (8.2 %)	2.29	0.02
High expectations	11 (11.1 %)	354 (5.4 %)	6.14*	0.03
Relatives' mental health	3 (3.0 %)	254 (3.9 %)	1.87	0.01
Emotional distress	37 (37.4 %)	2015 (30.7 %)	2.02	0.02
Grief/sadness	8 (8.1 %)	439 (6.7 %)	0.30	0.01
Lovesickness	14 (14.1 %)	1091 (16.6 %)	0.44	0.01
Anger	2 (2.0 %)	103 (1.6 %)	0.13	0.004
Loneliness	16 (16.2 %)	587 (9.0 %)	6.16*	0.03
Sexual harassment	16 (16.2 %)	352 (5.4 %)	21.76***	0.08
Sexual violence	15 (15.2 %)	239 (3.6 %)	35.19***	0.07
Sexual harassment	3 (3.0 %)	137 (2.1 %)	0.42	0.01
Violence	21 (21.2 %)	430 (6.6 %)	33.17***	0.07
LGBTQIA+	3 (3.0 %)	256 (3.9 %)	0.20	0.01
COVID-19	11 (11.1 %)	558 (8.5 %)	0.85	0.01

Variable	Frequent chatters ($n = 99$)	General user population of *krisenchat* ($n = 6558$)	Test statistic	Effect size
			U	*r*
Metadata of chatters				
Number of concerns or problems, *M (SD)*	2.11 (1.34)	1.55 (0.80)	238,313.50***	0.06
Message count in total, *M (SD)*	686.48 (1476.47)	81.94 (172.63)	67,791.00***	0.16
Word count in total, *M (SD)*	7850.95 (15,181.59)	1135.26 (2183.85)	85,900.00***	0.15
Mean message count within a session, *M (SD)*	46.13 (35.77)	23.41 (18.64)	134,524.50***	0.12
Mean word count within a message, *M (SD)*	13.62 (7.49)	17.11 (10.79)	259,513.00***	0.04
Metadata of counselors				
Message count in total, *M (SD)*	493.22 (883.47)	63.87 (129.33)	66,558.50***	0.17
Word count in total, *M (SD)*	10,396.62 (16,648.36)	1426.00 (2621.78)	58,190.50***	0.17
Mean message count within a session, *M (SD)*	35.31 (25.71)	17.83 (12.30)	124,148.50***	0.13
Mean word count within a message, *M (SD)*	24.98 (6.86)	25.10 (10.30)	304,661.00	0.01

Notes. χ^2, chi-square-test statistic; φ, phi-coefficient; φ_c, Cramér's *V*; *U*, Mann-Whitney-*U* test statistic; *r*, effect size. NSSI, non-suicidal self-injury. Calculation of % from valid cases.

* $p < .05$.

*** $p < .001$.

(n = 27, 27.3 %), and anxiety (n = 24, 19.8 %) were most prevalent. Compared to the general user population of *krisenchat*, concerns including psychiatric symptoms, sexual harassment, and violence were significantly more often addressed by frequent chatters (all $p < .001$). Additionally, suicidality, NSSI, sexual violence and violence (all $p < .001$), as well as loneliness and high social expectations (all $p < .05$) were significantly more often addressed by frequent chatters than by the general user population. No significant differences were found in concerns regarding psychosocial or emotional distress, LGBTQIA+ or COVID-19 (all $p > .05$).

3.4. User satisfaction

The vast majority of all frequent chatters (n = 34, 72.3 %) was satisfied with *krisenchat*, stating that the counseling was able to help them "well" or "very well". Furthermore, 89.4 % of frequent chatters (n = 47), who rated their likelihood of recommendation to others in the subsequent user satisfaction survey, indicated that they would recommend *krisenchat* to others. No significant differences were found considering user satisfaction, U = 52,286.00, p = .069, or the recommendation rate, $\chi^2(1) = 0.05$, p = .826, between frequent chatters and the general user population of *krisenchat*.

4. Discussion

4.1. Principal results and comparison with prior work

This study aimed to characterize frequent users in a chat-based counseling context regarding sociodemographic aspects, chat topics, utilization behavior, and satisfaction with the service. The results show that although only a small proportion of users (1.5 %) have a high-frequent utilization pattern, they received about a tenth (9.85 %) of the total number of words used by *krisenchat* counselors during the data collection period.

In the following sections, the results will be compared to findings of telephone-based services, since there is a lack of literature on frequent users within online helplines or in the chat-counseling context. Overall, both the proportion of frequent chatters and the amount of service that is used by frequent chatters are lower than in previous evaluations of telephone-based helplines (Spittal et al., 2015).

The mean frequent chatter of the German counseling service *krisenchat* is female, with no significant gender differences between frequent chatters and the general user population of *krisenchat*. A recent evaluation of an Australian telephone helpline showed that the average frequent user is more likely to be female (Spittal et al., 2015), which is consistent with the present findings. In contrast, a review summarized, that frequent callers of helplines are more likely to be male (Middleton et al., 2014). In addition, being male or transgender was identified as a predictor of becoming a frequent user (Spittal et al., 2015). The divergent findings may be explained by the gender distribution of the sample in the present study. It is a well-known phenomenon that the male population seeks help less often because of aversive emotions such as discomfort, fear, or shame in seeking help, especially when it comes to stigmatized issues such as mental health (Gonzalez et al., 2005; Hernan et al., 2010; Eckert et al., 2022). Thus, after male users have experienced seeking help anonymously and receiving satisfactory support, the tendency of these users to use such services consequently might be increased, as it satisfies the need for care while avoiding, for example, the fear of stigmatization.

Regarding utilization patterns, the results show that frequent chatters not only use the counseling service more often but also send significantly more messages and words than the general user population of *krisenchat* during the whole counseling process. Likewise, frequent chatters sent significantly more and longer messages during a counseling session. In contrast, it was found that the calls by frequent callers were shorter than the calls of the mean user of telephone-based helplines (Ingram et al., 2008). A possible reason for this can be the fact that a call generates a direct and synchronous response, whereas a chat counseling service cannot guarantee this instant response due to its asynchronous nature. A short call can provide quick relief. Users of chat services have to wait for a response and in crises do not know how quickly they can expect relief. A detailed message can thus include all stressful thoughts, which were sorted cognitively to bring them in a meaningful message, which can lead to initial relief. In addition, a message that has been sent can offer relief that it is now "gone" for the time – "the problem is now with someone else" and "it is now being taken care of".

Further, it was found that frequent chatters were significantly more likely to be in current use of professional help services. This finding corresponds to previous studies of frequent users of telephone-based helplines, of whom a substantial proportion was also currently undergoing professional treatment (Middleton et al., 2014). Additionally, the present results show that frequent chatters generally seek counseling for more severe concerns and, furthermore, address significantly more problems concerning suicidality, NSSI, sexual harassment (including sexual violence), and violence than the general user population of *krisenchat* does. This is in line with prior findings, which report that being identified by counselors as at-risk for suicide, NSSI, domestic violence, or at-risk of child welfare endangerment, as well as suffering from mental health issues, significantly increased the likelihood of being a frequent caller (Spittal et al., 2015). In contrast, other findings indicate that the most common reason for frequent users calling helplines was to talk regularly about their feelings, which was endorsed by 86 % of a sample of frequent callers (Middleton et al., 2017). However, the statements used in this study to assess the reasons for calling repeatedly did not include concerns on suicidality, violence, NSSI, sexual harassment, etc. These findings indicate that frequent users are more likely to suffer from serious, severe mental health symptoms, such as suicidality or NSSI, than the mean user population of helplines. This stands to reason, as mental health concerns are the main reason for contacting helplines for frequent users (Ingram et al., 2008; Coveney et al., 2012). Frequent users of helplines were seen to call them on a regular basis with reoccurring problems with no remarkable positive changes over time (Middleton et al., 2014). The additional use of crisis counseling services alongside professional help services may indicate a high need for psychosocial support (Watson et al., 2006; Burgess et al., 2008; Coveney et al., 2012). Some authors argue that frequent callers seem to rely heavily on crisis helplines because they tend to be isolated and tend to have less social support (Pirkis et al., 2016). Further, a telephone-based helpline is a low-threshold and easy-to-access service which provides contact with "real" people, who listen attentively and provide relief and solutions (generally also in a short time frame) and, hence, can develop into an alternate coping strategy for stress and reduction of tensions over time.

In conclusion, considering the potential severe mental health problems of frequent users of helplines, this subgroup cannot be ignored and should not be dismissed (Spittal et al., 2015). Nevertheless, it remains necessary to carefully consider how online helplines can best meet the special needs of frequent chatters with the limited resources of providers. Frequent users often receive referrals for professional help services within the healthcare system. Though, it remains unclear whether they actually implement or follow these referrals. However, it is assumed that approximately 16–50 % of the users follow the recommendations provided by the counselors (Middleton et al., 2014; Gould et al., 2021).

Finally, the present results indicate no differences in user satisfaction after the first counseling session between frequent chatters and the general user population of *krisenchat*. Both groups were highly satisfied with the service and would recommend the service at similar rates. Therefore, conclusions such as that increased satisfaction or displeasure after the first session will lead to renewed or increased use cannot be made. Nor should providers use immediate user satisfaction as an indicator to predict (frequent) utilization patterns. Still, it remains unclear

if the service is successful at catering to the needs of this specific group.

4.2. Strengths and limitations

To the best of our knowledge, this study is the first to define and characterize frequent users in a chat-based counseling service using real-world data. Strengths include the large sample size and the use of metadata in combination with data collected by the counselors and reported by the users. Several limitations must be taken into consideration. Due to the retrospective study design and the resulting convenience sampling, there is a bias in the gender distribution, limiting generalization to the general population. While frequent users of telephone-based helplines have been identified in the context of frequency of calls, the present definition of frequent chatters relies on a statistical inference based on the assumed workload for counselors. It must also be pointed out that the severity of concerns of users is associated with the duration of counseling and, therefore, those users are more likely to be classified as frequent chatters. As such, further studies that focus on this utilization pattern are needed to derive a unified definition. Furthermore, there are missing values on some relevant variables, which favors a bias of valid cases. Also, no follow-up data is available regarding the effectiveness of the service in catering to frequent users. No validated measuring tools for user satisfaction were used during data collection. Finally, it was not possible to verify whether users of *krisenchat* made contact with a new or different phone number and were thus classified as separate users.

4.3. Conclusion

This study shows that frequent users are also represented in a chat-based context and, despite the relatively low proportion, take up about a tenth of counseling resources. They are initially highly satisfied with the support offered in the new digital environment. Among the frequent users, there are significantly more people affected by violence or serious mental health conditions such as suicidality or NSSI. A substantial proportion of frequent users was also already receiving professional support or treatment. It can be concluded that frequent users have a high need for care and social support, which is why a good portion of them may search out and use other social resources in addition to their basic professional help. However, this does not correspond to the actual goal of counseling services such as *krisenchat*, which aim to bridge the time of an ongoing crisis with short-term crisis counseling to a subsequent connection to the health care system, if needed. Therefore, frequent users take up a lot of the capacity of counselors, although it remains unclear whether counseling is successful in the long term as well as in referring them to appropriate health care services. With the increasing development and use of chat-based counseling services and the evidenced high satisfaction with them, further research is needed to study subgroups such as frequent chatters to identify their needs in order to develop tailored counseling strategies. Moreover, longitudinal studies would provide information on whether satisfaction remains high in the long term, and whether the referrals provided are also implemented by frequent chatters. Finally, the present study provides new and important findings in a field and subgroup that has hardly been studied yet. Present ideas and approaches invite in the emerging field of chat counseling services to develop alternative definitions and to further investigate conspicuous subgroups, such as those of frequent users.

CRediT authorship contribution statement

ZE, SB, EK, and CRK designed the study. SS, JT, and RW prepared the data set. ZE and LG performed the statistical analysis. The article was written by ZE and SB. The finished manuscript has been approved by all authors.

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Declaration of competing interest

All authors confirm no competing interests. CRK received lecture honoraria from Recordati and Servier outside and independent of the submitted work.

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