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# The usage of a chat-based help service for young people: a nationwide descriptive study

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# The usage of a chat-based help service for young people: a nationwide descriptive study

Adolescents with subclinical depression are at high risk of developing mental disorders. Early interventions are effective but expensive. Affordable and accessible mental health services are needed. This multimethod study obtained its sample from the database of the Finnish national chat room service and describes the usage of the service among young people in Finland. All chats between 1.1-31.12.2018 were extracted and analysed using quantitative and qualitative methods. The usage frequency was analysed with descriptive statistics, while the specific content of the chat topics was first categorized with content analysis and then quantified and analysed using descriptive statistics. The association between the demographic characteristics and the usage were analysed. A total of 839 young people used chat room services. The great majority of the chat users were girls, and half were 12-14 years old. The use of the chat room varied in terms of the number of words and the duration of the chat discussions. Based on the chat room topics, young people had complex life situations with psychological distress, difficulties related to their social living environment, or they were involved in risky behaviour. The gender and the age of the users influenced their chat room usage. The results of this study can be used in the development of mental health services for young people.

Keywords: chat, chat room, mental health, online, young people

## Introduction

Mental disorders account for 14% of the global burden of disease and injury among young people (WHO, 2021). Mental health problems of any kind can have adverse effects on schooling, educational attainment, and relationships, but young people are still reluctant to seek help from formal mental health services (Gulliver, Griffiths, & Christensen, 2010; Rowe et al., 2014). Adolescents who have raised levels of depressive

symptoms but fall below the diagnostic criteria are at a particularly increased risk of developing a mental disorder (Lewinsohn, Rohde, & Seeley, 1998). Traditional in-person mental health services provided for early intervention to prevent the progression of chronic mental health problems are effective but expensive (Jacobs & Lesage, 2019). Therefore, less expensive, and lower-threshold services supporting mental health among young people are urgently needed (Coppens et al., 2015; Fusar-Poli, 2019).

The internet has become ubiquitous among children and young people, making technological solutions promising easy-access options for help seeking (Eurostat, 2021). Treatment guidelines have also recommended that 'the first point of contact' for information and support for young people to be low-threshold web-based services (Best, Gil-Rodriguez, Manktelow, & Taylor, 2016; Coppens et al., 2015; NICE, 2021). Help-seeking refers to communicating with others to obtain assistance in terms of understanding, advice, information, treatment, and general support in response to a problem or distressing experience (Rickwood & Thomas, 2012). The internet has typically been a source of information for young people because it offers anonymity, access, and user control (Burns & Birrell, 2014). Discussing one's worries and concerns online is less frightening and provides an emotionally safer environment for young people compared to face-to-face or telephone contact (King et al., 2006). The Minnesota Student Survey of 9th grade students in the US (N= 50,168) reported that young chat room users typically had more psychological and environmental problems compared to those who did not use chat rooms (Beebe, Asche, Harrison, & Quinlan, 2004).

Chat-based helplines with online messaging services connect users with trained health providers or staff (Bradford & Rickwood, 2014). They can offer easy-to-access one-to-one conversation platform for people who do not know each other (Callahan & Inckle, 2012; Fukkink & Hermanns, 2009; Haner & Pepler, 2016). Chat-based helpline

users can control the place and topic of the conversations. Young people use chats to share sensitive topics such as concerns in relationships, emotional problems, events that occurred at home or school, sexuality (Callahan & Inckle, 2012; Haner & Pepler, 2016), substance use, or suicidal ideation (Haner & Pepler, 2016). Typically, each chat can contain more than one topic, which can represent the complex life situations of young people (Haner & Pepler, 2017; Santor, Poulin, LeBLANC, & Kusumakar, 2007). Previously, the usage, quality and type of chat discussions have been measured by calculating the length of time (minutes) (Chardon, Bagraith, & King, 2011), the number of words (Barak & Bloch, 2006; Fukkink & Hermanns, 2009), the number of text lines (Chardon et al., 2011), or the number of chats in each chat discussions (Fukkink, 2011). Lengthy conversations have been found to indicate feelings of satisfaction (Fukkink, 2011) and relief during discussions (Barak & Bloch, 2006), while time constraints or long waiting times in the service queues have been identified as quality gaps in chat services (King et al., 2006).

Despite a variety of existing chat room services for young people, there is a lack of understanding about how chat services are used and what content is being discussed. There has been a limited focus on what is actually being said by the young people during online chat conversations (Rodda, Lubman, Cheetham, Dowling, & Jackson, 2015) because the content has been examined using the ratings used by service providers (Callahan & Inckle, 2012; Fukkink & Hermanns, 2009a; Haner & Pepler, 2016). Further, there is limited information available about chat room communication between young people and mental health care professionals (Davidson, Sanci, de Nicolás Izquierdo, Watson, Baltag & Sawyer, 2022; Verran, Uddin, Court, Taggart, Sutcliffe, Sturt, Griffiths & Atherton, 2018).

Being aware of the chatting patterns of young people could help to develop effective services to satisfy the needs for mental health support (Dowling & Rickwood, 2015; Rodda et al., 2015). Therefore, this paper aims to describe the usage of a national chat room service in Finland. Specifically, we (1) identified specific patterns of chat room use; (2) explored the topics discussed in chat room; and (3) made associations between the characteristics of the young people, chat room usage, and the content of the chat discussions.

## METHODS

### *Design*

We used a population-based descriptive study design. We focused on all of the chats in which young people discussed topics in a nationwide chat room service during a specific time period. The multimethod approach, with quantitative and qualitative methods, was used to gain a more complete understanding of the phenomenon (Hunter & Brewer, 2015). Quantitative data described how the service was used (the length and duration of chat conversations, and the season, day of the week and time in which the chat was engaged) while a qualitative approach was used to describe the content of the chats. In addition, the qualitative data were categorized and further quantified to describe the frequency of chatting (Sandelowski, Voils, & Knafl, 2009; Vaismoradi, Turunen, & Bondas, 2013), and the factors associated with chat usage were analysed using quantitative methods.

### *Setting*

The data were collected at the Mannerheim League for Child Welfare (MLL) in Finland

(MLL, 2012). This organization offers chat room services for Finnish-speaking young people. MLL is nationwide, well-known organization established in 1920. It is Finland's largest non-profit child welfare organization, and its main goal is to influence society and support families with children in various ways. MLL collaborates with schools and educational institutions by organizing for example, Peer Support Program and anti-bullying campaigns to increase the well-being of young people. In addition, MLL offers support services over the phone and online; these services are free of charge, well-known among young people and available for all young people under the age of 21. During 2018, there were a total of 266 counsellors in telephone and online services for young people. Counsellors are volunteer adults who are trained in their task with a structured 40-hour training program and supported by professional instructors at MLL (MLL, 2012). During the program, counsellors acquaint themselves with the development of young people, familiarize themselves with telephone and online services, reflect on their own role as helpers, and gain practical experience in interacting with individuals via phone, web messages, and chat.

Through the website, 'MLL YouthNet', young people have access to online counselling through the 'Child and Youth Helpline'. The helpline is an anonymous online contact channel that offers supportive counselling in response to young people's needs through web chat and web messaging. MLL established a one-to-one web-based chat room service in 2010. Chatting uses instant messaging between a young person and a counsellor without passwords or pseudonyms. Counsellors are volunteer adults who are trained in their task and supported by professional instructors at MLL (MLL, 2012). The counsellors support young people and share their emotions in writing through the chat room service. At the time of the data collection period (in 2018), the service was open from Monday to Wednesday from 5 p.m. to 8 p.m., and occasionally on other days.

There were no time limits for chatting, but young people could expect to receive a response from a counsellor during the service time only.

### *Eligibility criteria*

The data comprised written chat discussions from the 'Child and Youth Helpline' counselling service that had taken place between 1 January and 31 December 2018 and automatically stored at MLL. Chats that were written in Finnish by a young person were included in the data.

If a young person had only entered a chat room and did not write anything, the data was excluded from screening. This was done technically in Excel. The rest of data was screened and excluded if the chat only included a greeting such as, 'Hey or 'Hello' or only one short comment such as 'Ok' from a young person. Chats were also excluded if they included links to other websites, if they were sent from a family member or counsellor trainee, or if the young person had prohibited, in writing, the use of the chat for research purposes.

### *Ethical considerations*

Ethical approval was granted by the HUS Ethics Committee (Diary code: 1759/2019). A research permit was obtained from Mannerheim League for Children (Date: 20 June 2019). We adhered to the principles for medical research and legislation (WMA, 2013) throughout the study. The ethical principles of privacy and data protection were

respected so that it is not possible to identify individual participants (TENK, 2009). Only the researchers had access to the data (KM, MA, MV), and the data were password-protected during the study and will be after the study. On the login page of 'Child and Youth Helpline', there was a notice that stated that chats could be used for research purposes. The data will be stored for ten years after the end of the research, after which they will be appropriately disposed of (Holloway & Wheeler, 2015).

### *Data collection and management*

The data were extracted from the MLL database. The characteristics of the young people who engaged in the chats were described (age ≤11, 12–14, 15–17, ≥18 years, gender as girl, boy, other). The usage of the chat service was extracted to reveal the number of chats that occurred between 1 January and 31 December 2018, the number of words included in each chat, and the duration of the chats (start and end time of each conversation). In addition, the season (month), day of the week and time of chatting were extracted.

There was a total of 1,179 chats. If a chat did not include writing from young person, it was excluded (303, 26%). Of the remaining 876 screened chats, 37 (4%) did not meet the eligibility criteria (non-Finnish, greetings only, one short comment, links to different sites, counsellor education), which left us with 839 chats to be included in the analysis. A detailed flow chart of the chats is presented in Figure 1.

### *The data analysis*

The data were managed and analysed in Finnish, and this process comprised both quantitative and qualitative approaches.

#### *Quantitative analysis*

Background information of the participants (age, gender) was described using descriptive statistics. The usage of the chat service (number of chats sent, word count of each chat, duration of chat conversations, season, day of the week and frequency) was analysed with descriptive statistics (frequencies, percentages, means with SD for normally distributed variables, and medians with ranges for variables of skewed distribution).

The duration of each chat conversation was the time that elapsed between the first and the last chat entry of one session (minutes). Seasonal variation was recategorized and analysed using three-month periods: winter (January–March), spring (April–June), summer (July–September), and autumn (October–December) (Wirz-Justice, 2018). The variables day of the week and time of day were analysed based on regular opening days and hours (from Monday to Wednesday from 5 p.m. to 8 p.m.). Chat conversations that took place outside of these times were also considered in the analysis (other days of the week, other times of day). The data were missing for five participants' age and one participant's gender, and these missing values were not imputed (Newman, 2014). In other words, despite the lack of background information we included data from these participants' conversations in the analysis.

*Qualitative analysis*

Content analysis was conducted on the chats (Vaismoradi et al., 2013) using an analytical framework (e.g., a coding frame). To increase the validity of the content analysis the Framework Method was used to develop an analytical framework; this method is well suited for the analysis of large text-data because it provides a systematic way to manage and map data (Gale et al., 2013). The coding frame was formed as an analytical tool to reduce, classify, and synthetize raw data (O'Connor & Joffe, 2020). To increase the validity of the coding frame, the ICR was used to increase the consistency and transparency of the coding process and to ensure that the coding frame represented credible account of the data. We assessed the reliability of the coding by conducting systematic sampling with a sample of 10% of the chats (O'Connor & Joffe, 2020). One of the coding frame developers coded the chats according to the coding frame (O'Connor & Joffe, 2020), so no training of other assessors was required. Furthermore, the authors made conclusions in all phases of the study by moving back and forth between the original data and decisions made (Holloway & Wheeler, 2015).

The codes were inductively defined from the raw data without any predetermined classification. The data were managed in Word format with NVivo software (version 12 for Windows).

The analysis was conduct in five steps using the Framework Method (Gale, Heath, Cameron, Rashid, & Redwood, 2013). First, a researcher (KM) read all of the chats to become familiar with the data and develop a general understanding of the content of the chats. Second, open coding was used, and initial codes were generated based on the text in the young people's chats. Two researchers (KM, MA) individually coded the first ten chats (Gale et al., 2013; O'Connor & Joffe, 2020). The researchers compared the codes

and the coding results to identify the differences and similarities (Gale et al., 2013; Graneheim & Lundman, 2004). This process was performed with more chats until the coding frame was saturated and no new codes were identified (Gale et al., 2013). The codes were inductively grouped into categories according to their similarities and differences. Any discrepancies were negotiated and resolved with the third author (MV) (Fonteyn, Vettese, Lancaster, & Bauer-Wu, 2008). Thus, the data (chats 1–60) comprised 10 codes within 3 categories and their definitions, which formed the coding frame (O'Connor & Joffe, 2020).

Third, the coding frame was applied, and the reliability of coding was assessed with a sample of 10% (78/779) of the rest of the chats (O'Connor & Joffe, 2020). This was done with the final coding frame by conducting systematic sampling so that every 10th chat was coded starting from a randomly selected chat (Grove, Burns, & Gray, 2012). Intercoder reliability (O'Connor & Joffe, 2020), calculated with Cohen's kappa, was 0.88 out of a range between -1.00 and 1.00 (Cohen, 1960), and the percentage of agreement was 0.91. Based on these results, we can assume that ICR was good (Artstein & Poesio, 2008).

Fourth, the rest of the chats (701/779) were coded by KM according to the coding frame (O'Connor & Joffe, 2020). The data were transferred into a format where chats from one young person formed a single file in NVivo software. No new codes were identified that had been missing in the coding frame.

Fifth, researchers again categorized all the phrases and paragraphs that corresponded to each content topic of the coding frame and formed categories. The extent to which the categories contributed to the content of the data was examined. After that, the occurrence of each code and category in the data was calculated (Vaismoradi et al., 2013).

To describe the characteristics associated with usage of the chat room, the normality of the variables was tested using the Kolmogorov-Smirnov test. The variables were not normally distributed, and therefore the Kruskal-Wallis test was used (followed by post-hoc comparisons using Bonferroni corrections). The association between the characteristics of the young people, the number of chats, and chat room usage was analysed using SPSS (version 29.0; IBM Corp). In all tests, a P value of 0.05 or less was used to indicate a statistically significant difference in the data.

## RESULTS

### *Characteristics of the participants*

Out of 839 participants, half (418/839, 49.8%) were 12–14-years old. Most of the young people were female (71.2% 597/839) (Table 1).

### *Usage of the chat room*

The number of chat discussions by one person varied between 1 and 197 (Mean 33.77, Md 29). In each chat, the number of words varied from 2 to 2,103 (325.36, Md 195). The duration of each chat conversation varied between 17 seconds and 188 minutes (80.09, Md 66 minutes) (Table 2).

There were seasonal differences in the number of chat conversations: 31.6% (n=265/839) were in winter (January–March), 25.1% (211/839) in spring (April–June), 19.5% (164/839) in summer (July–September), and 23.7% (199/839) in autumn (October–December). Out of the regular opening days of the chat room, more chat conversations on Tuesdays (39.2%, 329/839) than on Mondays (33.0%, 277/389) or Wednesdays (26.6%, 223/839). During regular opening hours, the majority of chats started at 5 p.m. (54.6%, 458/839), and they started decreasing towards the end of the opening hours: at 6 p.m. (22.8% 191/839) and at 7 p.m. (19.9%, 167/839). Only a few chat conversations took place on other days of the week (1.2%, 10/839) or outside of normal opening hours (2.7%, 23/839).

### *Topics of discussions in the chat room*

Three chat topic categories were formed from the data: ‘Social ecosystem’, ‘Managing health and illnesses’, and ‘Experiencing self’. Quotes with identification numbers (IDs) are presented in Table 3 to illustrate the content of each category.

*Social ecosystem*

Young people shared about their interpersonal relationships, feelings, experiences, and thoughts associated with other people. There were descriptions of personal loss and the fear of losing a close friend, romantic partner, or family member as the result of separation or death. Young people described being lonely, in terms of a lack of relationships or not having a person with whom they could talk. They also shared that, even if they had relationships, they did not want to share their inner thought to others. They also described experiences of physical and mental violence inflicted on them or their own violent behaviour towards others.

Young people discussed their social living environments, which included their housing, school, workplace, and financial situation. They shared their thoughts on how they cope or did not cope in their living environment. They described how they had moved out of their home or changed schools or classmates. Young people talked about how changes in their own or their family's financial situation affected their daily lives, for example, having to work after school days. In addition, young people described their daily activities, including time management, routines, and responsibilities. They shared how they spend their time at school, at home after school, or at work and in their spare time: alone or with others. They also shared if they did not have any specific things to do. Furthermore, young people sought opinions and advice on dealing with their interpersonal relationships, housing, and financial situation.

*Managing health and illness*

Young people considered their maturation and sexuality to be problematic, confusing, or a good thing. Some shared insecurities and confusion about their sexual and gender identity. In addition, they had questions about sex in general, about intercourse and contraception, and about the possibility and actuality of pregnancy.

Young people disclosed both positive and negative means of self-help they had used to control their painful feelings or thoughts and health problems. Positive means of self-help included listening to music, playing games, reading books, and talking to someone. Negative ways of managing their feelings included self-harm, self-mutilation, or self-burning. Some disclosed that they did not have the means or resources to help themselves, and therefore they wanted to know what the counsellors thought of their self-help means. The young people told about searching online for information and ways to help themselves, and that they considered the reliability of the information. They asked questions about their health problems and asked for advice on how they could help themselves. They also asked for advice and support on whether they should seek help from the authorities.

The chats included descriptions of the various mental and physical health-related problems that they the young people had themselves as well as those of others. The young people expressed their doubts about whether symptoms could be a sign of a disease or a previously diagnosed illness, or if they were related to smoking cessation or pregnancy. They talked about accidents or injuries they had endured, and fears

associated with them. They shared their thoughts and actions on self-harm and suicide as part of other symptoms or illnesses and indicated that they wanted to get help.

The young people expressed their thoughts and experiences involving seeking and receiving support from professionals. A lack of privacy and unsuitable opening hours in health services had made help seeking difficult for them. They described where they had sought or received support or care, what kind of support or care it had been, and whether or not it had been helpful. They perceived the support as helpful if they felt that they had been heard and that they had been given enough time by familiar professionals. On the contrary, the support was considered not helpful if there had been too many professionals involved and the young person had had to repeat the same stories again and again.

*Experiencing self*

The young people described their feelings of self-worth by telling about how they saw, experienced, and valued themselves. They expressed their self-worth through achievements, appearance, and intelligence, which were described in a positive or critical way. They discussed how they could value themselves better, for example, by reducing their demands on themselves. The young people described their capabilities by expressing confidence or uncertainty about their own abilities. They described their capability or inability to motivate themselves. They also described their own shyness and fears that caused harm or hindered their ability to act.

In the chats, the young people shared their daily-changing moods by expressing their feelings, emotions, and reactions. They discussed things that they thought affected their mood. They told about their bad moods and feelings of hopelessness, saying that they wanted to harm themselves or die, but that they had not done so and did not intend on doing anything bad to themselves. They also expressed feelings of hope and hopelessness in relation to their future, for example, believing that something good was going to happen or thinking that nothing would get better.

Examples of each chat content category together with original quotations from the data are presented in Table 3. Chat IDs are included in brackets.

***Associations between the characteristics of young people and chat room usage***

The association between the characteristics and chat usage were analysed (Table 4). A statistically significant association was found between age and use of the chat room as well as season and use of chat room.

The young people who were ≤ 11 years tended to use fewer words than those in older age groups; the difference between the age groups was statistically significant in pairwise comparisons of ≤ 11-year-olds to 15–17-year-olds (p=0.017) and to ≥18-year-olds (p=0.035). Also, the durations of the chat conversations were shorter among those ≤ 11 years; the difference was statistically significant in pairwise comparisons of young people who were ≤ 11 years old to12–14-year-olds (p= ≤0.001) and to 15–17-year-olds

(p=0.043). However, the 12–14-year-olds had longer durations of chat conversations than the group of 15–17-year-olds (p=0.019).

The young people tended to use the chat services more and their messages included fewer words, in winter than in other seasons. Regarding the number of chats sent, the difference between winter and other seasons was statistically significant in all pairwise comparisons: spring (p=≤0.001), summer (p=0.002) and autumn (p=0.009). Also, regarding the number of words used; the difference between winter and other seasons was statistically significant in all pairwise comparisons: spring (p=≤0.001), summer (p=≤0.001), and autumn (P=0.002). The durations of chat conversations were shorter during winter and autumn; there were statistically significant differences between winter and spring (p=≤0.001) and autumn (p=0.043) and between autumn and spring (p=0.019).

### *Association between characteristics of young people and the content of the chats*

The most common category discussed in the young people's chats was 'Experiencing self' (678/839, 80.8%), and more than half of the chats referenced 'Interpersonal relationships' (556/839, 66.3%). The categories 'Managing health and illness' (610/839, 72.7%) and 'Social ecosystem' (617/839, 73.5%) were included nearly the same amount. The chats were most seldom related to 'Maturation and sexuality' (185/893, 20.7%) (Table 5).

Number of codes used in chat conversation varied from 0 to 9. Median of codes used were 3 (Mean 3.7, SD 2.05, Mode 3) and nearly half of chat conversations (839/415, 49,5%) contained 4 or more codes. In terms of the number of codes, some difference was observed between age groups. Those who were 18 years or older seems used less codes than younger one. (Table 6) 415

## DISCUSSION

We aimed to describe the usage of a chat room and the topics of chats among young people in a national online service in Finland. Most of the chat users in our study were females, which is in line with previous studies (Fukkink & Hermanns, 2009; King et al., 2006; Rickwood, Webb, Kennedy, & Telford, 2016). The length and duration of chat conversations varied based on factors such as age, season, and gender. The length of chat conversations, measured by the number of words used, varied depending on age. The 15–17-year-old group engaged in the longest chat conversation by word count. This may indicate that being more mature in age made chats more attractive (Barak & Bloch, 2006; Fusar-Poli, 2019).

The mean duration of chat room discussions was longer than in previous studies (Chardon et al., 2011; Fukkink & Hermanns, 2009). Those in the 12–14-year-old group had longer durations of chat conversations than the other age groups, although fewer words were used than in older groups. A lengthy stay in a chat room may be an indication of a slow writing or reading pace or a young person needing time to think about or understand what the counsellor has written (Fukkink & Hermanns, 2009).

During the winter season, the shorter duration and length of the chat conversations might explain the higher user numbers compared to other seasons. Seasonal changes in young people's moods and behaviours are common in Finland (Merikanto et al., 2012). Further, it has been shown that females are more seasonally sensitive than males (Tonetti, Barbato, Fabbri, Adan, & Natale, 2007), and depressive symptoms among young females are common during autumn and winter (Kristjánsdóttir, Olsson, Sundelin, & Naessen, 2013; Rastad, Ulfberg, & Sjödén, 2006). Young people can experience Seasonal Affective Disorder (SAD), which can include a depressed mood, low motor activity, low energy levels, and reduced social activity (Tonetti et al., 2007); this could explain why chat room usage times were shorter than in other seasons.

Similar to previous results, the chats discussions in this study included topics of interpersonal relationships, social living environment, maturity, sexuality (Callahan & Inckle, 2012; Haner & Pepler, 2016), mental- and physical health (Callahan & Inckle, 2012; Haner & Pepler, 2016), substance use, and suicide (Haner & Pepler, 2016). In addition to the topics mentioned above, we found that young people described how they experience themselves. Self-reflection is related to increased self-insight, which in turn can improve well-being (Mertens, Deković, van Londen, & Reitz, 2022). However, critical self-reflection can also indicate increased risk for depression (Harter & Jackson, 1993). Generally, four topics in one chat conversation might reflect the complex life situation of a young person (Haner & Pepler, 2017; Santor et al., 2007) and could indicate psychological distress, difficulties related to their social living environment, or involvement in risky behaviour (Beebe et al., 2004).

We need more information about which factors can influence how helpful young people see chat room discussions. Although there has been some discussion about the importance of chat length (Barak & Bloch, 2006; Fukkink, 2011), it is unclear which factors influence it and if it has an effect on the experience of usefulness of the chat room discussion. It has also been shown that the majority of chat users are female. We may therefore ask whether chat-based mental health support lacks appealing elements for boys, and if more should be done to make boys feel comfortable disclosing their concerns through using male-sensitive language, imagery, and settings (Robertson et al., 2015; Sagar-Ouriaghli, Brown, Tailor, & Godfrey, 2020). Therefore, further research is also needed to gain information about what factors would make it easier and more comfortable for males to use chat rooms that offer support for young people.

An analysis of a chat room service showed that the age of the users influenced its use. The number and variety of topics in chat conversations reflected the complexity and difficulties of young people's lives. When planning chat room services for young people, consideration should be given to the target ages of the service and how those in real need of mental health services are identified.

### *Limitations and strengths*

There are several limitations in our study that need to be considered. First, the conversations were anonymized by the service provider, which could have changed the original word count because of technical reasons. Second, the data was limited as one-fourth of the chats were excluded if the young person had only entered the chatroom

had not written anything. Reasons for a chat conversation not progressing into a counselling discussion could be that the young person had logged into the chat service just before the closing time or the young person did not want to start the conversation. Third, the content of nine chat conversations could not be coded; seven of them used one-word answers when asked questions by a counsellor, and two quit their chat conversation because there was not enough time for discussion. Fourth, we developed our data categorization framework using content analysis and a coding frame. Therefore, we must consider whether a sufficient number of chats were included in the development of the coding frame. Based on the methodological literature, an analytical framework is complete when it works well and no new codes are identified (Gale et al., 2013). In our study, this was the case after 60 chats. In addition, we evaluated a sample of 10% of the chats with ICR. Based on this process, we believe the qualitative analysis is reliable. Fifth, the chats were written in Finnish, and the participants represent the quite homogenous nature of the Finnish culture (Statistics Finland, 2022). Therefore, the results of this study may not be culturally generalizable. However, study participants were similar to previous studies on chat room services for young people regarding gender and age (Callahan & Inckle, 2012; Fukkink & Hermanns, 2009). Therefore, the results can be valuable outside of Finland when developing chat services that support the well-being of young people.

### *Conclusions*

This study provides information on chat room usage and the content of chats as well as patterns from the perspective of young people. Based on the conversation topics, the young people who used chat room service had complex life situations with

psychological distress, they had difficulties related to their social living environment, or they were involved in risky behaviour. However, based on the duration of the chat conversations and the topics discussed, it can be assumed that the chat room offered a confidential communication channel through which young people could share their thoughts and the events in their lives, and ask questions about things they had on their minds. More studies with robust research methods are needed in order to better identify the young people who real need mental health services, as well as the impact of chat room counselling on the mental health of young people. The results of this study can be used in developing affordable and easily accessible mental health services for young people.

## Disclosure statement

TP and HH is employed by the Mannerheim League of Child Welfare (MLL). No other authors have conflicts of interest to declare.


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**Table 1**

*The characteristics of the chat room users (N=839)*

| | (n) | (%) |
|---|---|---|
| Age (years) | | |
| ≤ 11 | 57 | 6.8 |
| 12–14 | 418 | 49.8 |
| 15–17 | 248 | 29.6 |
| ≥18 | 111 | 13.2 |
| n/a | 5 | 0.6 |
| Gender | | |
| Female | 597 | 71.2 |
| Male | 190 | 22.6 |
| Other | 51 | 6.1 |
| n/a | 1 | 0.1 |

n/a not available

**Table 2**

*A description of the number of chats and words used by young people during the chat conversations and the duration of the chat conversations* ***(N=839)***

| **Variables** | N | Min | Mean | (SD) | Max | Median | Mode |
|---|---|---|---|---|---|---|---|
| Number of chats | 28,330 | 1 | 33.77 | 25.69 | 197 | 29 | 11[a] |
| Number of words | 272,980 | 2 | 325.36 | 370.84 | 2103 | 195 | 29[a] |
| Duration of chat conversation (minutes) | 67,194 | <1 | 80.09 | 55.74 | 188 | 66 | 179 |

[a] Multiple modes exist. The smallest value is shown.

**Table 3**

*Description of the categorization of the chat content with original quotations. Chat IDs are included in brackets*

| Category | *Code* | Quotation |
|---|---|---|
| Social ecosystem | | |
| | *Interpersonal relationships* | |
| | | Maybe I'm crushing more on him, but he said he likes me too. And he is a little older than me and that bothers him a bit. (ID 1051) |
| | | Afraid of losing him. (ID 959) |
| | | He pushed me to have sex, even forced his hand in my pants. It left a scar, I'm afraid of men/boys I don't know. (ID 1047) |
| | | What should I do if I get messages from boys I don't know, asking if I want to go out of coffee or see a movie? (ID 1038) |
| | *Social living environment* | |
| | | I live alternately with my mom and dad, but I want to move in with my mom or at least live with her more, but I don't think it's going to happen. (ID1163) |
| | | I live on my own and I don't have enough money to buy food. (ID 621) |
| | | I work part-time a few nights a week alongside high school just so I can buy clothes and food, since mom and dad won't buy me anything. (ID 175) |
| | | I'm just doing my homework and assignments that others did at school when I was absent. And chatting as well… On the weekdays I have school for 0–7h, depending on the day. On days of I sleep 12–14h. I exercise when I feel like it. (ID 725) |
| | | I was at school and then I'm just home. I play the piano kind of a lot. And gaming. And I'm with my pet. (ID 263) |
| Managing health and illness | | |
| | *Maturation and sexuality* | |
| | | How long can puberty last if it started like a year ago or something? …I feel like I've got some problems with my penis. (ID 185) |
| | | I've been unsure of my gender and I don't know what I'm doing... I often think I'd like to be a boy and I don't like some of the so-called parts of a girl's body. (ID579) |
| | | What should I take into account when it's my first time having sex? (ID 610) |

There is such a situation that I am becoming a teenage mother and now this situation is starting to scare me…. an abortion would still be possible, but on the one hand I would like this child now that this is the case, but on the other hand I'm not sure. (ID 924)

*Self-help*

I set my alarm last night for 3 am, so I could go pee, but then I couldn't sleep anymore. Now I don't know what to do about tonight. (ID 297)

I've been trying to control the worst feelings by cutting myself, but about a month ago I realized it doesn't help at all, so I've been burning my hands since then. (ID 423)

I'm just too tired to change anything. Everything that used to help doesn't work anymore. (ID 441)

I started looking for information on the internet, but it was a bit tough, since I didn't know what was true. (ID 451)

*Symptoms and illnesses*

I've been thinking I might have an eating disorder. Out of nowhere I started feeling weird about food. (ID 385)

If I cut down [on smoking] then the side effects kick in, my head starts to hurt, I start vomiting, my body starts shaking, it's like I'm addicted to smoking. (ID 400)

Instead of the helmet breaking it would've been my head… Now I'm a bit scared of traffic. (ID 522)

I have an eating disorder, I keep hurting myself, I don't have suicidal thoughts but thoughts of self-harm. I guess something like depression as well. (ID 655)

*Support from professionals*

You know, we have it so that everyone sees if I even go to the school nurse and then they'll ask why I went there, etc. (ID 118)

It was a big deal for me that someone was actually present and supporting me. (ID 731) Somehow, it's hard to go there [school psychologist] since I have to explain everything from the beginning, which is pretty rough. (ID 624)

Experiencing self

*Self-worth*

I'm so confident that the internship went well. (ID 786)

I can't appreciate myself at all… I always think I'm worse than others and a big problem especially is that I hate how I look. (ID 755)

| | |
|---|---|
| | I'm sure there's no one dumber than me in the whole world… I wouldn't even want to be me. (ID 1114) |
| | Maybe I should give myself some time and try to have mercy on myself every now and then. Or learn to love myself more. (ID1068) |
| *Capability* | |
| | It's easier to write than to talk. (ID 1140) |
| | I have a big poster on the inside of the door to my room that reminds me every morning why I'm doing this, and it keeps me motivated. (ID 1100) |
| | I should've gone to take a blood test today, but I didn't want to… I'm afraid of needles and blood. (ID 1117) |
| *Mood* | |
| | I'm feeling divided… Both awesome and crappy. (ID 408) |
| | I'm ashamed and sometimes I'm so dejected that I start to cry. (ID 1168) |
| | I feel so bad that I just want to die. (ID 662) |
| | I'm eagerly looking forward to my future life. (ID 556) |
| | I'm afraid of what's to come. I don't think anything will change for the better. (ID 1076) |

**Table 4**

*The statistical difference between background information and number of chats sent, words used, and duration of chat conversations*

| Background Variables | N | Mean | Min | (SD) | Max | Md | Mode | P value[b] |
|---|---|---|---|---|---|---|---|---|
| Number of chats[a] (N=839) | | | | | | | | |
| Age | | | | | | | | 0.226 |
| ≤ 11 | 56 | 18.54 | 1 | 25.50 | 137 | 11 | 2[c] | |
| 12–14 | 416 | 32.80 | 1 | 23.54 | 197 | 29 | 13 | |
| 15–17 | 245 | 38.27 | 1 | 25.53 | 155 | 34 | 31 | |
| ≥18 | 111 | 36.95 | 21 | 30.49 | 172 | 29 | 16 | |
| n/a | 5 | 32.20 | 7 | 20.57 | 62 | 30 | 7[c] | |
| Gender | | | | | | | | 0.943 |
| Girl | 597 | 34.75 | 1 | 25.84 | 197 | 30 | 16 | |
| Boy | 190 | 34.07 | 1 | 24.63 | 172 | 30 | 21 | |
| Other | 51 | 21.25 | 1 | 25.32 | 133 | 11 | 2[c] | |
| n/a | 1 | | | | | | 30 | |
| Season | | | | | | | | <0.001 |
| Winter | 265 | 29.16 | 1 | 26.99 | 197 | 23 | 2 | |
| Spring | 211 | 36.49 | 1 | 24.34 | 155 | 32 | 11 | |
| Summer | 164 | 36.30 | 3 | 25.07 | 172 | 32 | 8[c] | |
| Autumn | 199 | 25.19 | 2 | 25.19 | 124 | 30 | 16[c] | |
| Weekday | | | | | | | | 0.876 |
| Monday | 277 | 32.76 | 2 | 24.84 | 197 | 29 | 16 | |
| Tuesday | 329 | 32.51 | 1 | 24.36 | 172 | 28 | 14 | |
| Wednesday | 223 | 36.87 | 1 | 28.42 | 155 | 31 | 28 | |
| Rest of the week | 10 | 33.70 | 5 | 26.01 | 89 | 30 | 5[c] | |
| Time | | | | | | | | 0.213 |
| 5 p.m. | 458 | 35.11 | 1 | 26.01 | 197 | 30 | 24[c] | |
| 6 p.m. | 191 | 32.52 | 2 | 26.54 | 155 | 27 | 3 | |
| 7 p.m. | 167 | 31.81 | 2 | 22.83 | 112 | 28 | 11[c] | |
| Other time | 23 | 31.48 | 4 | 30.54 | 102 | 18 | 7[c] | |
| Number of words used (N=839) | | | | | | | | |
| Age | | | | | | | | 0.015 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | ≤ 11 | 57 | 115.42 | 4 | 184.21 | 947 | 47 | 29 | |
| | 12–14 | 418 | 211.01 | 2 | 246.67 | 1767 | 129 | 61[c] | |
| | 15–17 | 248 | 525.33 | 2 | 446.26 | 2103 | 379 | 244 | |
| | ≥18 | 111 | 412.06 | 6 | 418.61 | 2006 | 250 | 23[c] | |
| | n/a | 5 | 424.60 | 44 | 445.62 | 1180 | 302 | 4 | |
| Gender | | | | | | | | | 0.464 |
| | Girl | 597 | 354.17 | 2 | 410.84 | 2103 | 198 | 44 | |
| | Boy | 190 | 281.51 | 9 | 233.54 | 1282 | 226 | 160[c] | |
| | Other | 51 | 152.00 | 2 | 197.15 | 786 | 65 | 49 | |
| | n/a | 1 | | | | | | 302 | |
| Season | | 839 | | | | | | | ≤0.001 |
| | Winter | 265 | 222.39 | 2 | 263.40 | 1620 | 135 | 12[c] | |
| | Spring | 211 | 347.91 | 6 | 374.09 | 2103 | 217 | 44[c] | |
| | Summer | 164 | 470.65 | 13 | 483.17 | 2018 | 275 | 13 | |
| | Autumn | 199 | 318.85 | 2 | 341.58 | 1767 | 192 | 6[c] | |
| Weekday | | 839 | | | | | | | 0.771 |
| | Monday | 277 | 314.76 | 2 | 354.35 | 1722 | 192 | 16 | |
| | Tuesday | 329 | 317.78 | 2 | 369.32 | 2018 | 179 | 13[c] | |
| | Wednesday | 223 | 50.66 | 3 | 398.32 | 2103 | 215 | 21[c] | |
| | Rest of the week | 10 | 271.50 | 7 | 214.25 | 588 | 199 | 7[c] | |
| Time | | 839 | | | | | | | 0.057 |
| | 5:00 p.m. | 458 | 350.03 | 3 | 374.30 | 2018 | 233 | 44[c] | |
| | 6:00 p.m. | 191 | 310.98 | 2 | 400.47 | 2103 | 144 | 8 | |
| | 7:00 p.m. | 167 | 274.01 | 5 | 300.62 | 1478 | 181 | 6[c] | |
| | Other time | 23 | 326.43 | 13 | 476.12 | 1516 | 73 | 73 | |
| Duration of chat conversation (N=839) | | | | | | | | | |
| Age | | 834 | | | | | | | ≤0.001 |
| | ≤ 11 | 57 | 40.53 | 1 | 32.55 | 151 | 32 | 58[c] | |
| | 12–14 | 418 | 93.36 | <1 | 57.03 | 187 | 84 | 175[c] | |
| | 15–17 | 248 | 73.39 | <1 | 52.64 | 188 | 63 | 31[c] | |
| | ≥18 | 111 | 66.23 | <1 | 52.26 | 184 | 50 | 46 | |
| | n/a | 5 | 61.40 | 14 | 39.72 | 118 | 63 | 14 | |
| Gender | | 838 | | | | | | | 0.191 |
| | Girl | 597 | 87.39 | <1 | 58.36 | 187 | 74 | 179 | |
| | Boy | 190 | 65.68 | 1 | 44.10 | 188 | 59 | 13[c] | |
| | Other | 51 | 48.31 | <1 | 40.75 | 174 | 42 | 56 | |
| | n/a | 1 | | | | | | 76 | |
| Season | | 839 | | | | | | | ≤0.001 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Winter | 265 | 67.29 | <1 | 53.73 | 182 | 51 | 13 | |
| | Spring | 211 | 87.36 | <1 | 57.72 | 186 | 73 | 72 | |
| | Summer | 164 | 83.30 | 4 | 55.50 | 188 | 77 | 104 | |
| | Autumn | 199 | 81.82 | <1 | 53.70 | 186 | 69 | 56[c] | |
| Weekday | | 839 | | | | | | | 0.690 |
| | Monday | 277 | 76.14 | <1 | 51.31 | 186 | 65 | 41 | |
| | Tuesday | 329 | 82.07 | <1 | 58.13 | 188 | 68 | 29 | |
| | Wednesday | 223 | 82.39 | <1 | 57.83 | 186 | 64 | 174[c] | |
| | Rest of the week | 10 | 72.80 | 8 | 45.82 | 164 | 61 | 8[c] | |
| Time | | 839 | | | | | | | .480 |
| | 5:00 p.m. | 458 | 81.45 | <1 | 54.91 | 186 | 69 | 46 | |
| | 6:00 p.m. | 191 | 78.80 | <1 | 57.50 | 187 | 66 | 13[c] | |
| | 7:00 p.m. | 167 | 77.79 | <1 | 54.47 | 188 | 62 | 16[c] | |
| | Other time | 23 | 80.43 | 4 | 68.44 | 182 | 58 | 30 | |

n/a not available

**[a] chats sent during conversations**

[b] *P* values above 0.05 were not considered significant.

[c] Multiple modes exist. The smallest value is shown.

**Table 5**

*Categories and codes that appeared in the young people's (N=839) chats*[a]

| Category<br>Code | N | % |
|---|---|---|
| Social ecosystem | 617 | 73.5 |
| Interpersonal relationships | 556 | 66.3 |
| Social living environment | 353 | 42.1 |
| Managing health and illness | 610 | 72.7 |
| Maturation and sexuality | 185 | 20.7 |
| Self-Help | 229 | 27.3 |
| Help seeking from professionals | 350 | 41.7 |
| Symptoms and illness | 350 | 41.7 |
| Experiencing self | 678 | 80.8 |
| Self-worth | 328 | 39.1 |
| Capabilities | 458 | 54.6 |
| Mood | 474 | 56.5 |

[a] More than one code can be defined for the content of one person's chat conversation.

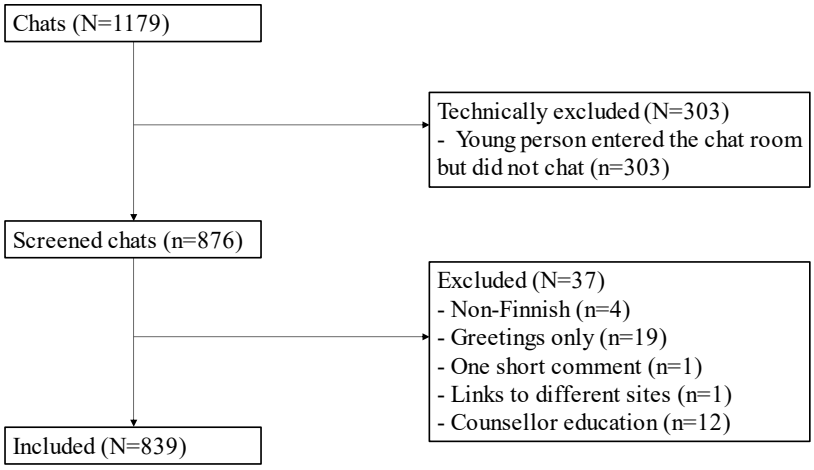


Figure 1. Flowchart for the data collection.