"You leave the chat with a different feeling than when you came in."

A Content Analysis about Negative Experiences Following Instant Messaging among Adolescents with and without a History of Non-Suicidal Self-Injury

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Abstract

Background: Instant messaging platforms seem to positively contribute to adolescent emotional well-being. However, some scholars show a link between the use of these platforms and negative emotional experiences. These emotions could be perceived as even more overwhelming for certain subgroups of adolescents, such as those who engage in non-suicidal self-injury (NSSI), and lead to self-injury to deal with otherwise difficult to handle feelings.

Objective: The current study aimed at providing a deeper understanding of what kind of experiences during instant messaging communications are perceived as emotionally upsetting by adolescents with and without a history of NSSI, and which situations could trigger NSSI thoughts or attempts in adolescents with lived experiences.

Method: We used content analysis to analyze short interviews conducted with a total of 17 adolescents with and without lived experiences of NSSI.

Results: Our results showed that experience of *Involvement in conflicts*, and especially *Name-calling and insults*, triggered negative emotional experiences for most adolescents (76.5%). Interpersonal stressors like *Name-calling and insults*, *Disagreements or arguments*, *Unwanted contact*, *Friendship break-up* and "*Ghosting*" were identified as major triggers for NSSI.

Conclusion: These findings could be used for the purpose of facilitating future research into mapping negative experiences adolescents have on instant messaging platforms, as well as used as a clinical guide to identify situations related to NSSI thoughts or episodes.

Keywords: Instant Messaging Communication, Non-suicidal Self-injury, Negative Emotions, Adolescence

1 Introduction

In recent years, most adolescents use instant messaging (IM) platforms to communicate and interact with each other. Although these platforms can contribute to adolescent emotional well-being (Dolev-Cohen & Barak, 2013), they may also be linked to negative emotional experiences (e.g., Blabst & Diefenbach, 2017). These adverse emotions could be perceived as particularly strong for certain subgroups of adolescents, such as those who injure themselves without an intent to die (e.g., Glenn et al.,

2011). In the current study we assessed the experiences during IM communications which adolescents perceived as emotionally upsetting, as well as those that triggered self-injurious thoughts and behaviors in adolescents with lived experiences.

The term non-suicidal self-injury (NSSI) includes actions such as cutting and hitting oneself, and is performed in the absence of suicidal ideations (Nock & Favazza, 2009). The onset of this behavior is usually between the age of 12 and 14 (Cipriano, 2017), and on average 17% of adolescents have self-injured at least once in their lifetime (Swannell et al., 2014), with Germany

Delia Latina, Benjamin Claréus, Brianne Gayfer, Polona Sajco & Stephen P. Lewis

reaching almost 35% (Brunner et al., 2014). Adolescents who engage in this behavior regularly are likely to experience depressive symptoms, anxiety and emotional dysregulation as young adults (Daukantaitė et al., 2021). In addition, NSSI is a strong risk factor for suicidal ideations and attempts (Klonsky et al., 2013). Because of these high rates, as well as the associations between NSSI and poor mental well-being, NSSI engagement during adolescence has become a growing media and public health concern (Rabin, 2011).

Researchers reported that NSSI serves several functions that are not mutually exclusive (Nock & Prinstein, 2004). However, affect regulation seems to be the most common (Taylor et al., 2018), as NSSI helps adolescents to manage emotions experienced as overwhelming or otherwise difficult to handle (Cipriano et al., 2017). More specifically, self-injury thoughts and behaviors seem to occur particularly in the context of elevated negative emotions linked to interaction with peers. In this respect, a handful of studies indicated "feeling rejected" as one of the negative emotions that led to NSSI urges (e.g., Victor et al., 2019). However, the above-mentioned studies only examined face-to-face relationships, leaving out a big portion of social media interactions that nowadays occur among adolescents.

In recent years, platforms like WhatsApp, Instagram, or Facebook messenger have become a central communication channel and means to create and maintain relationships. These Apps are perceived as major platforms on which people conduct their social life (Aizenkot & Kashy-Rosenbaum, 2018). Although IM platforms often serve to promote positive relationships (Trepte et al., 2018), and contribute to adolescent emotional well-being (Dolev-Cohen & Barak, 2013), their use may also be linked to negative emotional experiences. A study among young adults reported how hostile (e.g., sending angry messages) or insensitive (e.g., reading messages without responding) IM were associated with loneliness and depressive symptoms (Tsai et al., 2019). Another recent study showed high levels of stress among adolescents who were concerned about whether a sent message had been read or not (Blabst & Diefenbach, 2017). If interactions via IM seem to be linked to negative emotions among adolescents in general, this could be even more so for adolescents who are particularly perceptive to negative emotions, which is the case for many adolescents who engage in NSSI (Glenn et al., 2011). For individuals who regulate negative emotions with NSSI, IM interactions could precede NSSI thoughts or episodes. With this in mind, a better understanding of the experiences that trigger negative emotions during IM communications among adolescents seems warranted for the purpose of facilitating future research into this topic.

2   The Present Study

The current study aims at describing emotionally upsetting online experiences of adolescents with and without a history of NSSI. Specifically, we wanted to investigate what kind of experiences during IM communications are perceived as emotionally upsetting, and identify which of them are described as triggering NSSI thoughts or episodes in adolescents with lived experiences.

3   Method

3.1   Participants and Procedure

Seventeen participants were recruited for this study (M_{age} = 14.84; SD = 2.03) and following the concept purposive sampling until code saturation (Hennik et al., 2017). Eight of these (M_{age} = 14.88; SD = 1.96) were female patients at the inpatient and outpatient unit of the clinic for children and adolescent psychiatry, psychotherapy, and psychosomatic therapy in Göppingen, Germany. These patients were currently in therapy for a variety of clinical diagnoses. The other nine adolescents (67% male; M_{age} = 14.82; SD = 2.27) did not report ongoing NSSI, and were recruited in the German districts of Bavaria and Baden-Württemberg. To participate in the study, the adolescents needed to be between 12 and 18 years of age and needed to speak fluent German. In addition, adolescents belonging to the NSSI group needed to report at least five NSSI episodes within the previous year (Ammerman et al., 2017). Exclusion criteria for participation included an autism diagnosis, as well as any clinical diagnosis for the adolescents belonging to the control group.

Prior to the data collection, the larger study from which the current paper utilizes data was approved by the Institutional Review Board of Ulm University, Ulm, Germany, as well as by the state medical association of Baden-Württemberg, Germany. Interested participants contacted the main author after reading the flyers promoting the study on social media (e.g., Facebook), or after receiving the flyers from school teachers or social assistants. Written informed consent was obtained from the participants as well as their legal guardians. The data collection took place between May and July 2021. Interviews with the participants with lived NSSI experience were conducted at the clinic they were recruited from. Due to the restrictions following the spread of the SARS-COv-2 virus, the other interviews took place over an encrypted video consultation service currently used in the German health care sector. All interviews were audiotaped and transcribed subsequently. Although the interviews were conducted during ongoing lockdowns associated with the SARS-COv-2 virus, there was no explicit mention of the associated changing conditions for everyday IM communication in the interview questions and no participant spontaneously reflected upon the role of the pandemic.

Fourteen participants (P1-P14) were interviewed in pairs and three participants (P15-P17), who were not currently engaging in NSSI, were interviewed individually due to technical difficulties. Group interviews were preferred to one-on-one interviews as the research question aimed at the breadth rather than texture of experiences. In addition, group interviews may foster spontaneity in the interview situation as participants would feel less exposed and have the possibility to build on each other's experi-

ences (Willig, 2013). The interviews were conducted by a certified psychologist and by the main author, who is also a certified psychologist and has extensive experience in the field of NSSI during adolescence. The interviews followed a semi-structured guide with questions asking participants to describe emotionally upsetting interactions over IM that they were either included in or had witnessed (see supplementary material for more information). In addition, adolescents who engaged in NSSI were asked if any of these experiences had preceded thoughts about NSSI or NSSI episodes. Although the majority of interviewees did not know each other, a few of them knew each other by sight. The interviews lasted between 20 to 35 minutes, and participation was reimbursed with a 15 € voucher.

3.2 Analytic Plan

The data was analyzed with conventional content analysis as described by Hsieh and Shannon (2005), aiming at inductively construing a hierarchical order of categories describing the experiences that adolescents perceived as emotionally upsetting. At the initial stage of analysis, authors D. L. and B. G. read each transcript multiple times and extracted relevant experiences. These experiences were grouped based on their commonalities with regard to *what* happened, and these categories were then considered in relation to each other to create a secondary structure. The transcripts were then reviewed again with this preliminary categorization in mind, expanding or compiling the categories to represent the related content in its entirety. Any disagreements were resolved with discussions involving the whole research group when needed. D. L., B. C., and B. G. finalized the analysis by developing definitions for the categories and identified exemplars of the categories in general, as well as those instances where a category was associated with thoughts about NSSI or NSSI episodes. Thus, experiences pertaining to NSSI thoughts or episodes were only considered at this final stage of analysis, as these were relatively few and the goal of the analysis was to develop a more comprehensive overview of any experiences related to feeling emotionally upset during IM by adolescents, regardless of their lived experience (Hsieh & Shannon, 2005).

4 Results and Interpretation

The analysis (summarized in Figure 1) suggested that experiences during IM, which made adolescents emotionally upset, could be divided into four main categories, namely *Being involved in conflict*, *Being ignored or rejected*, *Relationships ending*, and *Communication difficulties*. Half of the eight participants with lived experience of NSSI reported that IM had preceded NSSI ideations or episodes once, and one additional participant recounted two different experiences. These experiences fall under the main categories of *Being involved in conflict and Relationships ending*. See Table 1 for more details.
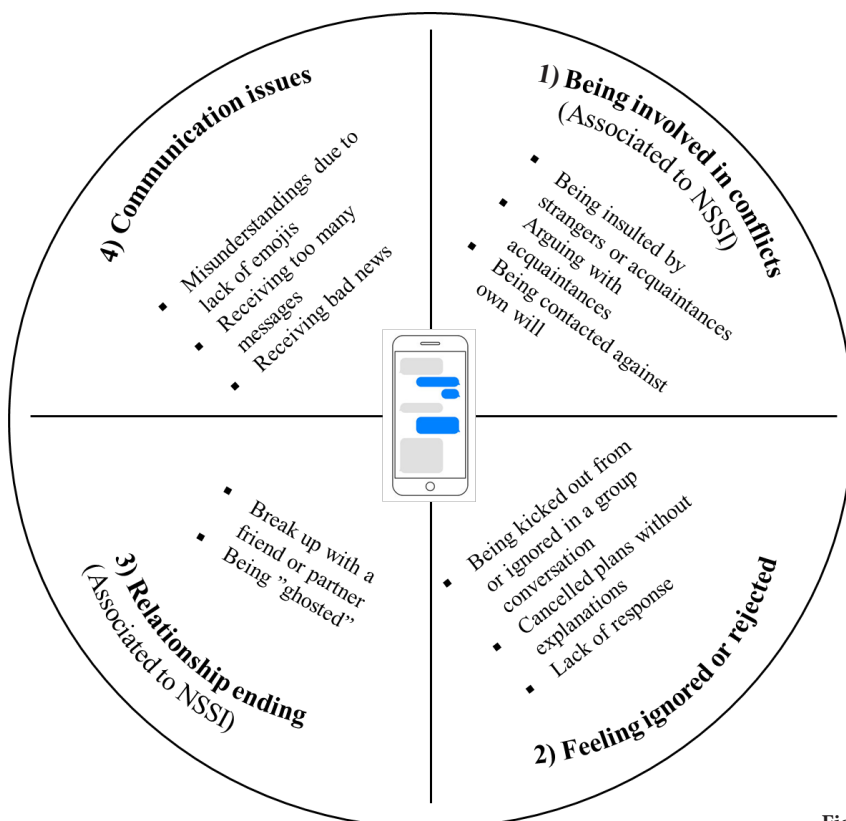

Figure 1. Graphical summary of the findings.

Delia Latina, Benjamin Claréus, Brianne Gayfer, Polona Sajco & Stephen P. Lewis

Table 1. Overview of Categories and Subcategories Including Their Prevalence (N = 17).

Main category – n (%)	Sub-category – n (%)	Associated with NSSI
Being Involved in conflict –13 (76.47%)	Name-calling and insults – 12 (70.59%)	Yes
	Disagreements or arguments – 4 (23.53%)	Yes
	Unwanted contact – 1 (6%)	Yes
Feeling ignored or rejected – 8 (47.06%)	Being excluded from a Group – 6 (35.3%)	No
	Cancelled or rejected plans – 3 (17.65%)	No
	Being "left on read" – 2 (11.8%)	No
Relationships ending – 8 (47.06%)	Romantic break-up – 5 (29.41%)	No
	Friendship break-up – 4 (23.53%)	Yes
	"Ghosting" – 2 (11.8%)	Yes
Communication issues – 7 (41.18%)	Misunderstandings – 6 (35.3%)	No
	Spam/too many messages – 5 (29.41%)	No
	Delivered bad news – 3 (17.65%)	No

Note. NSSI = Non-suicidal Self-Injury.

4.1 Emotionally Upsetting Experiences during IM Communication

Being involved in conflict

Within the most recurrent main category that included experiences of *Being involved in conflict*, participants most commonly described various instances of *Name-calling and insults* that were either directed towards themselves or witnessed being directed towards others. While this had been experienced both with strangers (e.g., witnessing harassment on social media) and with acquaintances (e.g., in a class group chat), *Disagreements or arguments* were usually with people our participants knew. The one participant who recounted *Unwanted contact* as a source of distress also suggested that the variety of platforms for IM enabled the person whom they did not want to talk with to contact them, despite their best efforts to keep this person away. Similar to how IM facilitated unwanted contact at inopportune times, the other varieties of conflicts within this category were suggested as more prevalent when talking by IM than when meeting face-to-face due to the potential of remaining anonymous: "Many people dare to insult and to talk badly about other people, because you can't track back who it is from" (P17). There-

fore, some participants suggested that online conflicts affected them less than conflicts occurring face-to-face (e.g., P8: "When they cannot tell it to my face, then it also doesn't hit me"). However, for the majority it exacerbated distress, as it was perceived as unwarranted (e.g., P17: "it was totally unjustified"), or as augmenting ongoing conflicts and bullying outside of the online context (e.g., P3: "[the bullying] was digital as well with all those jokes that were made at his expense in the chats and so on").

Feeling ignored or rejected

In addition to being involved in conflict, participants would also become emotionally upset when *Feeling ignored or rejected* over IM. This could include *Being excluded from a group*, both in terms of being kicked out or ignored in group conversations, but also that IM could be a way of noticing that one had been left out of face-to-face interactions:

> P1: You ask like "Yo, what's up tonight?" and then [they answer] "Yes we are here or there", so that you basically don't get invited […] Then of course you leave the chat with a different feeling than when you came in.

While being ignored or rejected invoked feelings of sadness and loneliness, *Cancelled or rejected plans* were usually a source of frustration and annoyance due to lack of explanation (e.g., P15: "I wanted to meet with a buddy […] ten minutes before [the meeting] he wrote 'nah, wait a moment, I'm not sure if it works' [I: Hmm] And then he didn't contact me for two hours"). Finally, *Being "left on read"* included situations where someone had not responded to their attempts at contact, while participants were uncertain of whether this was because they did not want to talk or were too busy to respond. Similar to how cancelled plans were upsetting, it was the disregard for their emotions that contributed to annoyance when the other did not respond: "In my opinion it is disrespectful when you just don't reply and when you just can't, you should just write like 'Yeah ok, I can't [reply] right now'" (P7).

Relationships ending

About half of the participants had experience with *Relationships ending* through IM, which primarily consisted of *Romantic break-ups* and *Friendship break-ups*. Besides feeling distressed or hurt due to the dissolution of meaningful relationships, the fact that it happened over IM and not face-to-face could amplify such reactions (e.g., P1: "A classic comes to my mind, [which is] getting dumped via WhatsApp, [it] hurts the person a little more, because it wasn't done personally"). This amplification was attributed to the act of being seen as cowardly (e.g., P11: "friendships are being ended through the Internet because you don't have the guts to do it in person"), and as a signal that the other person had not valued the relationship (e.g., P16: "maybe just like that, because he has not really been my friend"). This was particularly the case in instances of *"Ghosting"*, which described the termination of a relationship when the other stopped responding (e.g., an end consequence of being left on read).

Communication issues

The final category, *Communication issues*, included instances where the nature of the media could contribute feeling emotionally upset after IM. For instance, communication restricted to text and emojis would contribute to *Misunderstandings,* such as whether something was meant to be taken seriously or not (e.g., P5: "When someone writes and they write like without emojis, like none at all, then you sometimes don't know how they mean it"). *Misunderstandings* were also difficult to clarify in writing, which could also contribute to feeling upset and confused when *Delivered bad news.* The immediacy also made it difficult to put misunderstandings or bad news in proportion to other events: "When you receive such bad news, because it's like a big topic at the moment, then you just write it immediately, instead of waiting that you see each other again" (P1). *Spam/Too many messages* was also a confounding factor in these instances, as trying to interpret what was salient and what was not became more difficult and annoying with a multitude of information.

4.2 IM Precedents of NSSI

Of the participants with reported lived NSSI (n = 8) experience, five suggested that they had self-injurious thoughts or episodes after IM interactions. These predominantly included different kinds of experiences associated with *Being involved in conflict.* One participant thought about NSSI after bad memories were revoked from *Unwanted contact*s (i.e., P11: "She brought up memories again like this, which I wanted to forget and that's why […] there was the thought [to self-injure]"). Another adolescent thought about NSSI when feeling guilt and shame after a *Disagreement or argument* (i.e., P12: "[He] said I treated him badly. Although actually I always did everything for him to feel good"), and another felt urges to self-injure when feeling angry and frustrated about unjustified *Name-calling and insults* (i.e., P13: "[the insults] also hurt me and made me angry because I also don't judge them, […] it was, like where I felt this urge for self-harm"). The other participant with an experience related to *Name-calling and insults* (i.e., P8: "When I was just contacted by random profiles on Instagram […], that it simply was real um bullying, then yes [I have self-injured]") also recounted another experience after a friend broke up their relationship by IM, leading to distress and confusion. The fifth participant recalled NSSI after experiencing *"Ghosting"* from an important person, questioning the reasons why the person stopped responding to them: "Before that we had been very good friends […] She said that we were going to call and write each other" (P14). Importantly, however, IM interactions were not described by participants as the sole instigating factor of NSSI ideations or episodes, but rather construed within those "different things [that] add up" (P12) or "[things] which also pushed me relatively far" (P13).

5 Discussion

In this study, we used conventional content analysis per Hsieh and Shannon (2005) to categorize experiences described as emotionally upsetting by German adolescents in short interviews, and identify which of these had triggered thoughts about NSSI or NSSI episodes in adolescents with lived NSSI experience. We found that *Being involved in conflict*, particularly when these included *Name-calling and insults*, was mentioned by the majority of adolescents and also described in connection with NSSI. Associated emotions described by participants in our sample such as anger, fear, sadness, and loneliness have also been identified as consequences of different kinds of online victimization among adolescents in previous studies (Wang et al., 2020). Accordingly, not all adolescents in the present study construed conflicts experienced online as negative interactions, although it exacerbated distress for the majority.

Feeling ignored or rejected over IM, and especially *Being excluded from a group*, was identified as the second most frequent situation that had emotionally upset our sample. This is unsurprising given that platforms like WhatsApp, Instagram, or Facebook messenger are important channels for seeking and maintaining social connections (Shapiro & Margolin, 2013), and might help adolescents fulfill primary social needs such as the need to belong (Baumeister & Leary, 1995) and the need to be popular (Santor et al., 2000). In this respect, scholars (e.g., Lee & Chiou, 2013) have argued that individuals are becoming increasingly dependent on social network sites (e.g., Facebook, Instagram) to gratify their social needs. Thus, being excluded from an online group without a clear explanation could undermine such needs and, as suggested by participants in our study, rejections over IM could be particularly hurtful. We believe that ending relationships (i.e., *Break-ups*) were upsetting due to similar reasons, with the addition of participants questioning whether the relationship had been one-sided if the break-up was online instead of face-to-face. While studies have shown that adolescents consider many benefits to breaking up online versus face-to-face (LaBode, 2011), our findings might indicate that ending a relationship via IM is still a cultural taboo interpreted as rude, insensitive, and hurtful.

Lastly, *Communication issues*, and especially *Misunderstandings,* were reported as upsetting for some adolescents. These types of situations also seem to appear in other studies (e.g., Berglund, 2009), as adolescents might, for example, engage in simultaneous activities while chatting, or interpret emojis differently (Tigwell & Flatla, 2016) or simply lack the nonverbal cues of face-to-face conversations (e.g., Riva, 2002).

We found support for associations between NSSI thoughts or episodes and experiences related to *Name-calling* and *insults, Disagreements or arguments, Unwanted contact, Friendship break-ups* and *"Ghosting"*, which corroborates that NSSI often occurs in the context of negative emotions linked to interpersonal problems (e.g., Plener et al., 2015), regardless of whether these occur in person or via IM. These experiences were de-

scribed by individuals with no lived NSSI experience as well, but risk factors such as heightened emotional reactivity (Mettler et al., 2021) and difficulties regulating these emotions otherwise (Cipriano et al., 2017), could be the reason for some participants considering NSSI in these instances. Given that similar experiences (e.g., break-ups, verbal insults) occurring face-to-face have been linked to NSSI (e.g., Mossige et al., 2016; Price et al., 2016), our study suggests that qualia of these experiences transfer to the IM context, and may also precede NSSI.

6   Limitations and Future Directions

The interviews in the present study were relatively short which made it difficult to study aspects of intentionality and the sequencing of emotions and events further. The group interview setting might have contributed to this as well, as participants might have been reluctant to mention very distressing events or their reactions in detail. Additionally, we could not conclude from our data whether a higher recurrence in specific experiences indicated that these were more frequent than others, or the cause of more significant distress and therefore more readily recalled. Considering that negative interactions over social media platforms are associated with several psychosocial problems (Bottino et al., 2015) including suicidal attempts and thoughts (Lanzillo et al., 2021), future studies should consider why and to what degree negative experiences via IM precede emotional distress and/or NSSI thoughts or episodes among adolescents.

Given the restrictions tied to the spread of the SARS-COv-2 virus, only the patients with a history of NSSI were interviewed face-to-face. This disparity in methods of data collection could count for some lack of information. Although there was no discernable difference in the quality of the communication between the face-to-face and online interviews as noted by the experienced interviewers, studies using the same methodology between groups should be conducted to replicate our findings.

Quantitative research on this topic could use the categories found in this study to guide the development of questionnaires mapping negative experiences adolescents have on IM platforms, and identify how this connects to aspects of emotional reactivity and coping style. The current categories could also be used in clinical practice to identify situations related to NSSI thoughts or episodes, given that many adolescents are uncomfortable disclosing these problems to others (e.g., Lustig et al., 2021) and might need appropriate prompts to discuss their experiences.

Future studies should also assess whether our results can be transferred to individuals of varying gender identities, as the group of adolescents with lived experiences, and who recalled NSSI thoughts or episodes following IM interactions, was constituted solely by participants identifying as girls. For instance, it had been suggested that girls are more sensitive to environmental stressors than boys (e.g., interpersonal problems; Oldehinkel & Bouma, 2011) and may therefore react differently to distressing online experiences. In addition, recent literature has reported val-

uable insights into the association between NSSI (e.g., Liu et al., 2019) and identifying outside the gender binary. Based on these findings, assessing the triggers of NSSI or NSSI thoughts during IM communication including adolescents who do not fit neatly into the restrictive categories of men and women could provide relevant and more general insights about this phenomenon.

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Supplementary Table

Summary of Interview Questions

I	All participants were asked the following:
	• Do you know of any app, other than "WhatsApp" that allows you to chat with your friends?
	• Which App do you use the most?
	• If you think about one of your friends or yourself, which are some of the situations that make you feel negative emotions when you talk on Whatsapp or on any other App that you mentioned?
II	The participants who engaged in self-injury were asked the following:
	• Has any of the situation that you mentioned before made you want to injure yourself?

Note. The above-mentioned questions represent the protocol for a semi-structured interview guide. The phrasing of the questions or potential follow-up questions were adapted to the conditions of each interview.