More than just enduring − Mental health and well-being among Swedish young adults who ceased self-injuring since adolescence

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Benjamin Claréus

LUND
UNIVERSITY

DOCTORAL DISSERTATION

Doctoral dissertation for the degree of Doctor of Philosophy (PhD) at the Faculty of Social Sciences at Lund University to be publicly defended on 21st of September at 13.00 in LUX Aula, Helgonavägen 3, 223 62 Lund

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Abstract:

Non-suicidal self-injury (NSSI) is an umbrella term for non-lethal behaviours that are unlikely to be intended as suicidal, such as cutting, hitting, or burning oneself. The aims of this dissertation were to investigate i) the mental health and well-being of Swedish young adults who have ceased engaging in NSSI since adolescence, and ii) the psychosocial conditions that facilitate NSSI cessation and psychological growth during this period. This thesis utilizes data from a longitudinal Swedish project called *Självkänsla Och Livssituation*. The project encompassed all grade 7 and grade 8 regular school students in a Swedish municipality. Participants answered questionnaires in 2007 (T1: *N* = 992, mean age = 13.73) and 2008 (T2: *N* = 987, mean age = 14.78) and were asked to do so again 10 years later, in 2017 (T3: *N* = 557, mean age = 25.33). Eleven participants who reported to have ceased self-injuring since adolescence were also interviewed in 2018 about their experiences using a semi-structured protocol. In relation to the first aim, Paper I indicated that reporting to have engaged in NSSI at T1 or T2 was associated with mental health problems (i.e., depression, anxiety, and stress) and difficulties regulating emotion at T3. This relationship was especially prominent if repetitive NSSI (≥5 instances) was reported at both T1 and T2. Paper II showed that more young adults reported ceasing repetitive NSSI rather than continuing it; however, no significant differences in reported mental health problems, well-being (i.e., life satisfaction and flourishing), resilience, or emotion regulation were found between participants who ceased (defined as ≥5 instances at T1 and T2, but not at T3) and those who continued to self-injure repetitively (defined as ≥5 instances at T1, T2, and T3). However, Paper IV and some extended analyses that utilized an alternative definition of these engagement patterns indicated that young adults who had fully ceased NSSI since adolescence (i.e., ≥5 instances at T1 or T2, 0 at T3) reported higher resilience and flourishing than did those who continued to injure repetitively (i.e., ≥5 instances at T1 or T2 and T3). In relation to the second aim, in neither Paper II nor the Extended analyses could the continuation or cessation of repetitive NSSI be reliably predicted from adolescent psychosocial functioning. The interviews analysed narratively for Paper III suggested that most young adults described that their lives had improved since adolescence. This positive change was initiated at a pivotal event that enabled the participants to sense agency in their lives. Sensing agency made it easier to cope with adversity by means other than NSSI, and subsequent positive life changes expanded this sense of agency and facilitated and sustained a sense of growth. Paper IV found that reporting repetitive NSSI at T1/T2 was associated with retrospective recall of more negative life events during both adolescence and later in life. However, positive life events and especially having reached an important life goal 1 to <5 years ago were much more commonly recalled by young adults who ceased than those who continued to self-injure.In conclusion, distress related to past and recent mental health problems and experiences of adversity can persist among young adults who have ceased NSSI since adolescence. At the same time, their resilience and well-being improved relative to those who continued NSSI, a change that could be enabled through sensing agency and experiencing positive life events. For young adults with lived experience of NSSI, such experiences may help them see life as more than just something that needs to be endured.

Key words: self-injury, self-harm, cessation, recovery, adolescence, well-being, mental health, agency

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MADE IN SWEDEN

To those waiting for their turning point

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Acknowledgements

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Among those that will be named, I first and foremost want to thank my supervisors *Daiva Daukantaitė* and *Tove Lundberg*, who have accompanied me since the before the beginning of my PhD studies and hopefully beyond the end as well.

Daiva, your decision to employ a confused master student you had never met before changed my career and my life. Since, you have enthusiastically encouraged me to find my own paths (and detours), and generously shared your statistical knowledge whenever I needed it. Moreover, you have graciously carved time out of evenings and weekends to give me insightful feedback on my written works, and you have helped me see that conscientiousness can be a strength instead of a weakness.

Tove, inviting you to be my co-supervisor is one of my rare spur-of-the-moment ideas that I've never reconsidered. With kindness, patience, and expertise, you have guided me in the world of qualitative methodology, and thus enabled me to think about and do research in new and exciting ways. Your door (physical and metaphorical) has always been open and knowing that you have been there to help me relocate the forest when I lost it behind all the trees has filled me with comfort as well as confidence.

Thank you to *Lars-Gunnar Lundh*, *Margit Wångby-Lundh*, and *Jonas Bjärehed* for welcoming me into the project and sharing your expertise about the topic and the practicalities of conducting longitudinal studies. I have also learnt a lot from and had a lot of fun working with the project members who joined after me, including *Lo Foster*, *Gustaf Rådman*, and *the students who wrote their theses within the project*. All of you have shown me that having two or more heads is better than one, especially for someone who tend to get hopelessly stuck within his own.

Thank you to my half-time commentators *Gisela Priebe* and *Inger Ekman*; to *Maria Zetterqvist*, who was my commentator at the final seminar; to *Elizabeth Lloyd-Richardson*, for being my opponent on the final defence; to *Delia Latina*, who suggested we partner together for an upcoming special issue; and to *Penelope Hasking*, *Mark Boyes*, and *Nicole Gray*, for inviting me into your research team during the Collaborative Research Program. All of you have enabled interesting discussions and provided me with invaluable input, and your different but complementary perspectives on self-injury and mental health have been an important source of inspiration and insight to me.

Furthermore, thank you to *Emma Renström*, for allowing me to practice the ins and outs of research before I started my PhD studies, and *Anna Lindqvist*, for all the

norm-critical discussions and allowing me to stay at your place when I needed to. I also want to thank the *past and current PhD students at the department* for the fika and fun social activities. Among these, I particularly want to thank *Amanda Klysing* for having the patience to share an office with me for the past 5 years. Additionally, I want to thank *Janne Kalucza* for learning R together and for remaining critical to my potassium levels, and *Jason Maurer* for ensuring that the rest of this thesis is more grammatically correct than this acknowledgement section.

Finally, thank you to *Lilje Norberg*, who helped me design the front cover and along with *Nisse* (and others) helped me to practise writing; and to *Reid Lantto*, for your feedback on an earlier draft of this dissertation, our many discussions, and your support throughout the years, but words are meaningless and forgettable.

Abstract

Non-suicidal self-injury (NSSI) is an umbrella term for non-lethal behaviours that are unlikely to be intended as suicidal, such as cutting, hitting, or burning oneself. The aims of this dissertation were to investigate i) the mental health and well-being of Swedish young adults who have ceased engaging in NSSI since adolescence, and ii) the psychosocial conditions that facilitate NSSI cessation and psychological growth during this period. This thesis utilizes data from a longitudinal Swedish project called *Självkänsla Och Livssituation*. The project encompassed all grade 7 and grade 8 regular school students in a Swedish municipality. Participants answered questionnaires in 2007 (T1: $N = 992$, mean age = 13.73) and 2008 (T2: $N = 987$, mean age = 14.78) and were asked to do so again 10 years later, in 2017 (T3: $N = 557$, mean age = 25.33). Eleven participants who reported to have ceased self-injuring since adolescence were also interviewed in 2018 about their experiences using a semi-structured protocol.

In relation to the first aim, Paper I indicated that reporting to have engaged in NSSI at T1 or T2 was associated with mental health problems (i.e., depression, anxiety, and stress) and difficulties regulating emotion at T3. This relationship was especially prominent if repetitive NSSI (≥5 instances) was reported at both T1 and T2. Paper II showed that more young adults reported ceasing repetitive NSSI rather than continuing it; however, no significant differences in reported mental health problems, well-being (i.e., life satisfaction and flourishing), resilience, or emotion regulation were found between participants who ceased (defined as ≥5 instances at T1 and T2, but not at T3) and those who continued to self-injure repetitively (defined as ≥5 instances at T1, T2, and T3). However, Paper IV and some extended analyses that utilized an alternative definition of these engagement patterns indicated that young adults who had fully ceased NSSI since adolescence (i.e., ≥5 instances at T1 or T2, 0 at T3) reported higher resilience and flourishing than did those who continued to injure repetitively (i.e., ≥5 instances at T1 or T2 and T3).

In relation to the second aim, in neither Paper II nor the Extended analyses could the continuation or cessation of repetitive NSSI be reliably predicted from adolescent psychosocial functioning. The interviews analysed narratively for Paper III suggested that most young adults described that their lives had improved since adolescence. This positive change was initiated at a pivotal event that enabled the participants to sense agency in their lives. Sensing agency made it easier to cope with adversity by means other than NSSI, and subsequent positive life changes expanded this sense of agency and facilitated and sustained a sense of growth. Paper IV found that reporting repetitive NSSI at T1/T2 was associated with retrospective recall of more negative life events during both adolescence and later in life. However, positive life events and especially having reached an important life goal 1 to <5 years ago were much more commonly recalled by young adults who ceased than those who continued to self-injure.

In conclusion, distress related to past and recent mental health problems and experiences of adversity can persist among young adults who have ceased NSSI since adolescence. At the same time, their resilience and well-being improved relative to those who continued NSSI, a change that could be enabled through sensing agency and experiencing positive life events. For young adults with lived experience of NSSI, such experiences may help them see life as more than just something that needs to be endured.

Populärvetenskaplig sammanfattning

Självskadebeteende innebär exempelvis att en person skär, slår eller bränner sig själv men i något annat syfte än att de vill avsluta sitt liv. Ofta skadar en person sig för att hantera psykisk ohälsa (t.ex. ångest och nedstämdhet) och/eller en svår livssituation (t.ex. upplever eller har upplevt misshandel, försummelse och mobbing).

Denna avhandling handlar om hur unga vuxna som skadade sig själva när de var i tonåren mår idag, och hur det var möjligt för dem att sluta skada sig. Resultaten bygger på data insamlat inom ett stort svenskt projekt som heter *Självkänsla Och Livssituation*. Från början innefattade projektet alla elever i årskurs 7 och årskurs 8 i en svensk kommun. Undersökningsmaterialet består av enkäter som är insamlade under 2007, 2008 och 2017, samt intervjuer som genomfördes under 2018.

Resultaten visar att majoriteten av deltagarna som skadade sig själva slutade med detta under övergången mellan tonår och ung vuxenålder. Men de deltagare som skadade sig själva i tonåren (oavsett om de slutade eller fortsatte) rapporterade en mer utbredd psykisk ohälsa samt större utsatthet för svåra situationer vid de olika undersökningstillfällena, när en jämför med de som aldrig skadade sig. Men trots detta så rapporterade unga vuxna som slutat skada sig själva ett ökat välmående samt att livet på det stora hela hade förbättrats för dem. Det kunde exempelvis handla om att livet kändes meningsfullt och givande trots eventuella ohälsoproblem, samt att de inte blev lika påverkade av eller kunde gå vidare ifrån negativa händelser i sitt liv. Det var också viktigt att en börjat se sig själv som en person med möjlighet och förmåga att påverka sin livssituation. Med denna känsla av att livet kan bli mer än något som måste passivt uthärdas så blev det möjligt att sluta skada sig själv samtidigt som en mår bättre.

List of papers

Paper I

Daukantaitė, D., Lundh, L.-G., Wångby-Lundh, M., Claréus, B., Bjärehed, J., Zhou, Y., & Liljedahl, S. I. (2021). What happens to young adults who have engaged in self-injurious behaviour as adolescents? A 10-year follow-up. *European Child & Adolescent Psychiatry*, *30*, 475-492.

Paper II

Wångby-Lundh, M., Lundh, L.-G., Claréus, B., Bjärehed, J., & Daukantaitė, D. (unpublished). Developmental pathways of repetitive non-suicidal self-injury: Predictors in adolescence and psychological outcomes in young adulthood.

Paper III

Claréus, B., Lundberg, T., & Daukantaitė, D. (2021). "What I couldn't do before, I can do now": Narrations of agentic shifts and psychological growth by young adults reporting discontinuation of self-injury since adolescence. *International Journal of Qualitative Studies on Health and Well-being*, *16*(1), 1986277.

Paper IV

Claréus, B., & Daukantaitė, D. (2023). Off track or on? Associations of positive and negative life events with the continuation versus cessation of repetitive adolescent non-suicidal self-injury. *Journal of Clinical Psychology*, Advance Online Publication.

Additional publications (peer-reviewed, topic relevant)

Claréus, B., Hasking, P. A., Gray, N., & Boyes, M. (2023). Is ceasing self-injury enough? Differences in psychological health between people reporting behavioural cessation of non-suicidal self-injury and those who consider themselves to have stopped self-injuring. *Journal of Clinical Psychology*, *79*, 255-269.

Rådman, G., Claréus, B., & Daukantaitė, D. (2023). Adolescents' Emotion Regulation Strategies Questionnaire–Extended: Further development and associations with mental health problems in adolescence. *Assessment*, Advance Online Publication.

Latina, D., Claréus, B., Gayfer, B., Sajco, P., & Lewis, S. P. (2022). "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 non-suicidal self-injury. *Digital Psychology*, *3*(1), 32-39.

Author's contribution to the papers

The thesis is part of a project that has been ongoing at the Department of Psychology, Lund University, since 2005. I was born in the same year as several of the participants of this project but in a different municipality; thus, I was not aware of the project before I joined as a research assistant in early 2017. At this time, the project group involved Daiva Daukantaitė (main supervisor and current principal investigator [PI]), Lars-Gunnar Lundh, Margit Wångby-Lundh, and Jonas Bjärehed. Many other PhD graduates, PhD candidates/students, research assistants, and undergraduates have been actively involved with the project over the years. Therefore, the purpose of this section is to explicate my contribution to the larger project and to the papers included in my thesis.

During my time as a research assistant, I contributed by applying for ethical approval, constructing the questionnaire, and matching each participant's person number with their ID-number. I also suggested the addition of a scale that measured flourishing, and while the idea for assessing life events was formulated by the project group, I was responsible for constructing the items. I was also responsible for sending out all invitations to complete the questionnaire in 2017 and collected data from two pilot samples. The pilot data included cross-sectional data from an age-equivalent sample and longitudinal data from a sample from another municipality. As I am not a licensed psychologist, I could not conduct the follow-up interviews at T3 due to ethical restrictions. However, in addition to drafting the interview guide, I contacted and scheduled appointments for those 11 participants whose data was analysed in Paper III. I also discussed the interviews with Jonas Bjärehed – the interviewer – after they were conducted.

I formulated the idea for this dissertation based on insights I had gained about the present project as a research assistant. The focus on ceasing self-injury was not preformulated by the PI or any other project group members. Moreover, similar research questions had not been addressed in previous publications that utilized the data from 2007–2008, and at the time NSSI cessation was an understudied topic. For the quantitative papers where I am not first author, my main responsibilities included data analysis (Paper I), particularly analyses conducted after multiple imputation, and providing intellectual inputs on different drafts (Papers I and II). For the papers where I am first author (Papers III and IV), I identified the relevant theoretical frameworks and analytical approaches, conducted the data analyses, wrote the first draft, and made revisions.

Chapter 1: Introduction

Self-injury, such as cutting or hitting oneself, among young people and particularly adolescents (13−17 years old) has been deemed a major public health concern in Sweden (Skagius & Zetterqvist Nelson, 2020) and other countries in the Western cultural sphere (e.g., Klonsky et al., 2014). In addition to causing wounds and bleeding that might require medical attention, self-injury in adolescence is cross-sectionally and prospectively related to several negative psychosocial outcomes. Adolescents who self-injure are more likely to report experiences of contextual (e.g., a history of physical/sexual abuse, bullying, parental neglect) and psychological distress (e.g., depression, anxiety; for a review, see Hawton et al., 2012). For individuals who lack ways to manage distress or who perceive these as ineffective relative to their experience, self-injury may become a viable method of enduring such hardship (Hasking et al., 2017; Nock, 2009). Although most individuals who self-injure in adolescence cease this behaviour before reaching adulthood (Moran et al., 2012; Turner et al., 2021), they still have a higher risk of experiencing mental health problems when compared to those who have not self-injured (Borschmann, Becker, et al., 2017; Mars, Heron, Crane, Hawton, Lewis, et al., 2014).

Helping young people who self-injure entails supporting their mental health recovery and their short- and long-term well-being, in addition to facilitating the cessation of self-injury. To this purpose, it is important to understand how people with experience of self-injury reconstrue hardships as well as their lives in general as more than something that needs to be endured. This includes what makes life meaningful and worth living, despite past, current, or potential future contextual and psychological distress. The last few years have seen an increase in the number of available evidence-based treatments directed at promoting self-injury cessation and recovery (Glenn et al., 2019; Kothgassner et al., 2020). However, many adolescents who self-injure do not tell anyone within their social networks or the healthcare system about their distress (Rowe et al., 2014; Simone & Hamza, 2020). Additionally, much of the current research on community samples has investigated why individuals start or continue to self-injure rather than why and how they stop (Mummé et al., 2017), particularly for individuals at risk of long-term engagement. Thus, the central topic for this thesis is to investigate the mental health and well-being outcomes related to self-injury in adolescence and the psychosocial conditions related to self-injury cessation in young adulthood.

Research questions and structure of the thesis

The research questions of this thesis are as follows:

1. What does the mental health and well-being of young adults who have ceased to self-injure since adolescence look like?
2. What psychosocial conditions facilitate the cessation of self-injury and psychological growth between adolescence to young adulthood?

I address these research questions through a literature review as well as quantitative and qualitative data from a longitudinal project called *Självkänsla Och Livssituation*, which included students enrolled in grades 7 and 8 in five schools of a southern Swedish municipality. These students completed self-report questionnaires in 2007 and 2008; about half responded to a self-report follow-up survey sent about 10 years later (2017) and eleven of these respondents agreed to be interviewed about their experiences (2018). The theoretical and empirical emphasis will be on describing the experiences of those who reported self-injury in adolescence (2007–2008) but not in young adulthood (2017–2018). Other developmental patterns (e.g., continuing to self-injure into young adulthood) will be included for comparison. The focus is on describing the experiences of this cohort in its entirety, such that "community" is defined at the generational level rather according to subgroups of young people who share specific experiences (e.g., receiving in- or outpatient care) or identities (e.g., gender, sexuality).

This thesis is divided into eight chapters. In this first chapter, I explicate my epistemological positioning. I move then into defining "self-injury" in the context of this thesis in the second chapter, before expanding on this definition through exploration of the research history and classification of self-injury. The third chapter will focus on theories related to why some adolescents start (and may continue) to self-injure, which serves as the backdrop for the fourth chapter, wherein I discuss why and how individuals cease self-injury and the conditions for concurrent and subsequent psychosocial growth. In chapter 5, I highlight the limitations of the current body of knowledge as described in chapters 3−4 and describe how these are addressed within the four papers. Subsequently, I present the methods used in this thesis (chapter 6), a summary of the results (chapter 7), and a general discussion of the main findings (chapter 8).

Epistemological positioning

My thesis is epistemologically informed by and engages with critical realism, psychosocial perspectives, pragmatism, and transformative research. I do not endorse direct realism – I do not intend to produce acontextual knowledge of self-

injury (c.f., Tracy, 2010). Thus, explicating on my epistemological position is necessary as my assumptions about the nature of knowledge are acknowledged to constrain the literature overview and shape the presentation and interpretation of the empirical findings (c.f., Fletcher, 2017). Therefore, I want to be transparent in demarcating the perspectives not actively discussed in this thesis.

A critical realist and psychosocial perspective

Critical realism is a philosophical position that ascribes to ontological realism (Willig, 1999). It assumes the existence of observable and experienceable phenomena (e.g., self-injury) that are generated by social, cognitive, and affective structures. For example, the shared meaning between contemporary and historical Western descriptions of self-injury as discussed by Angelotta (2015) would, from a critical realist perspective, suggest that self-injury is a tangible phenomenon, not just a discursively constructed one. However, in contrast to realism, critical realism rejects that phenomena can be objectively described, operationalized, and measured. Instead, it suggests that experiences and representations of the world and the phenomena therein are in constant fluctuation over subjects, time, and context, as any experience or representation is always mediated through the myriad filters of human interpretation (Fletcher, 2017). This is also in line with the psychosocial approach as outlined by Redman (2016), who describes the psychological as something beyond social meanings and practices, yet such meanings and practices cannot be separated from different emotional states, cognitive processes, and behaviours. Thus, the social must be accounted for in any study of the psychological, as these dimensions are intertwined (rather than interconnected).

Consequently, this thesis adopts a pluralistic rather than a dualistic approach to describing the social context and psyche of self-injury. I will also avoid reductionism to behavioural and neurobiological processes. While the brain may undergo many structural and functional changes between adolescence and young adulthood that could impact one's inclination to self-injure (e.g., Ahmed et al., 2015; Habermas & Bluck, 2000; Luna et al., 2010), such data was not collected in this project. Moreover, these changes are not directly informative of people's lived experience or social representations of psychological growth. Therefore, in this thesis, I focus on the qualia of emotions, cognitions, and social interactions related to self-injury; although behavioural or neurobiological explanations are mentioned, they are not actively engaged with. This focus on the psychosocial does, however, mean that I cannot fully account for cultural explanations and expectations. As gender and sex differences are presumed to reflect socialization patterns, social pressures, and discursive practices rather than individual differences (c.f., Laye-Gindhu & Schonert-Reichl, 2005; Magnusson & Marecek, 2012), such discussions are beyond the scope of the present work as well.

A pragmatist perspective

A common critique of critical realism is its inability to define "truth" (Fletcher, 2017) – at least according to traditional realist standards, which is defined as the correspondence between what exists and what we know (Kaplan, 1964). A critical realist epistemology endorses fallibilism, such that knowledge is more or less aligned with an elusive reality. Consequently, critical realism in isolation is insufficient for evaluating the contribution of this thesis to a rapidly expanding research field (c.f., Figure 1). Furthermore, without reviewing the totality of this extensive work, this thesis cannot rest solely on claims of novelty and innovation. Therefore, the generation and positioning of knowledge in this thesis will be approached pragmatically per the description of Johnson and Onwuegbuzie (2004). This means that truth is not viewed as a transcendental property, but instead something realized in current and future practices of framing, testing, asserting, and utilizing knowledge claims.

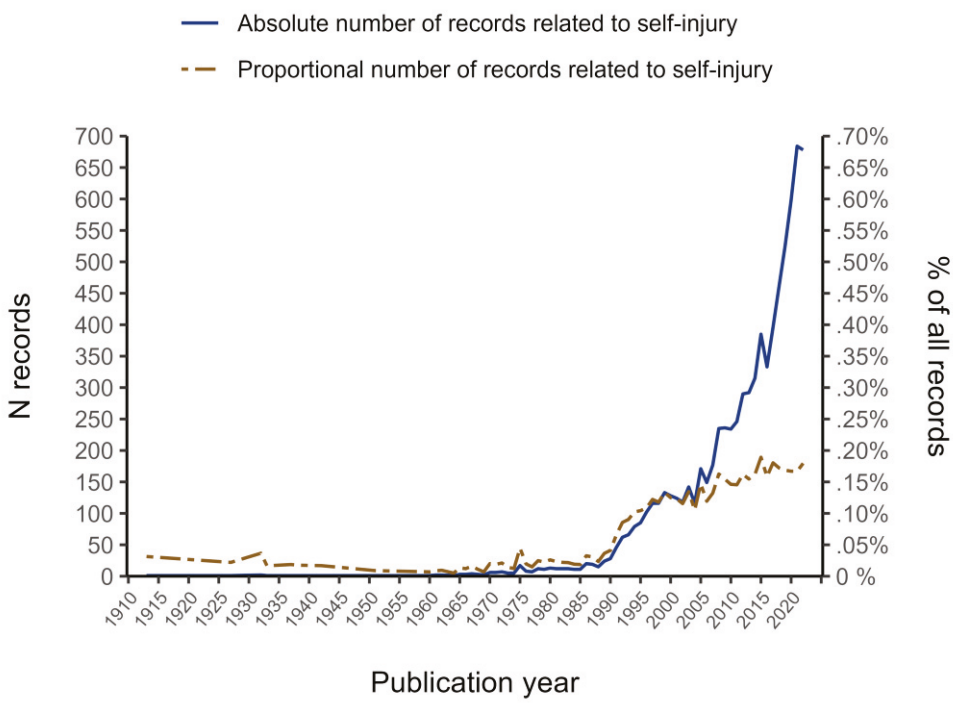

Figure 1. Absolute and proportional number of records indexed in Clarivate Analytics' Web of Science (https://webofknowledge.com/) between 1910 and 2022 that include terminology associated with self-injury in the topic, abstract, or keywords. The proportion was computed in relation to *all* indexed records. Records were defined as journal articles, books, and book chapters published in the fields of social and life sciences and general internal medicine.

Consequently, the methodology of this thesis has been informed by pragmatism such that interpretability and simplicity are preferred over model complexity in the hypo-deductive studies (Holtz & Odağ, 2020). Moreover, narrative tensions between what happened and how it is told are resolved by viewing these as complementary in the third study (Smith & Sparkes, 2006). This view of different epistemologies as complementary has also informed the implementation of mixed methods. I view the qualitative and quantitative methodologies as pragmatically commensurate (Onwuegbuzie & Leech, 2004), such that their integration provides a comprehensive and diversified view of cessation of self-injury and psychological growth (Bryman, 2006). In other words, the qualitative data does not only contextualize the general, and the quantitative data does not only generalize the ideographic; rather, these different approaches afford diverse kinds of understanding that inform the larger aim of this thesis. The contribution of this thesis to the field is thus considered in terms of how the findings align with and inform future scientific inquiry, clinical work, and everyday lived experiences. I examine this by establishing their correspondence to current thought within these domains and by suggesting changes or expansions to thinking and doing in research about the cessation of self-injury.

A transformative perspective

Since self-injury is associated with aversive stimuli such as pain (Hooley & Franklin, 2018) and has been interpreted through frameworks of mental ill health, social contagion, and social manipulation (Hasking & Boyes, 2018; Lewis & Hasking, 2023; Staniland et al., 2022), people who have self-injured are often stigmatized in current society (Staniland et al., 2021). Experiences of discrimination and oppression, as well as anticipating or internalizing such experiences, can exacerbate feelings of shame and hopelessness (Long, 2018). Therefore, care must be taken when translating lived experiences into a research framework: scientific representations must not perpetrate stigma and misinformation about self-injury (c.f., Hasking & Boyes, 2018). Therefore, the axiology of this project has been informed by the transformative paradigm described by Mertens (2017). This paradigm is used to strike an ethically attentive balance in the tension between pragmatically applicable representations and the comprehension of complex and multifaceted lived experiences (c.f., Critical Methodologies Collective, 2022). Mertens (2017) suggests that this balance is enabled through reflecting on and, if necessary, explicating the concept of cultural respect, as well as by practicing an ethics of care (Edwards & Mauthner, 2012). I consider reflexiveness as well as ethics to be active doings throughout the whole research process, rather than activities only accomplished through explicit declaration of intent and adherence to ethical codes (Edwards & Mauthner, 2012; Lazard & McAvoy, 2020). Consequently, and in accordance with Skeggs (2002) and Brinkmann and Kvale (2005), I practice neither reflexivity nor ethics of care through self-telling in this

thesis, as this could wrongly position these processes as having a definitive beginning or end. Nevertheless, I find it essential to explain how this body of work relates to a predominantly Western research field and how it draws on discursive practices that aim to mitigate stigma.

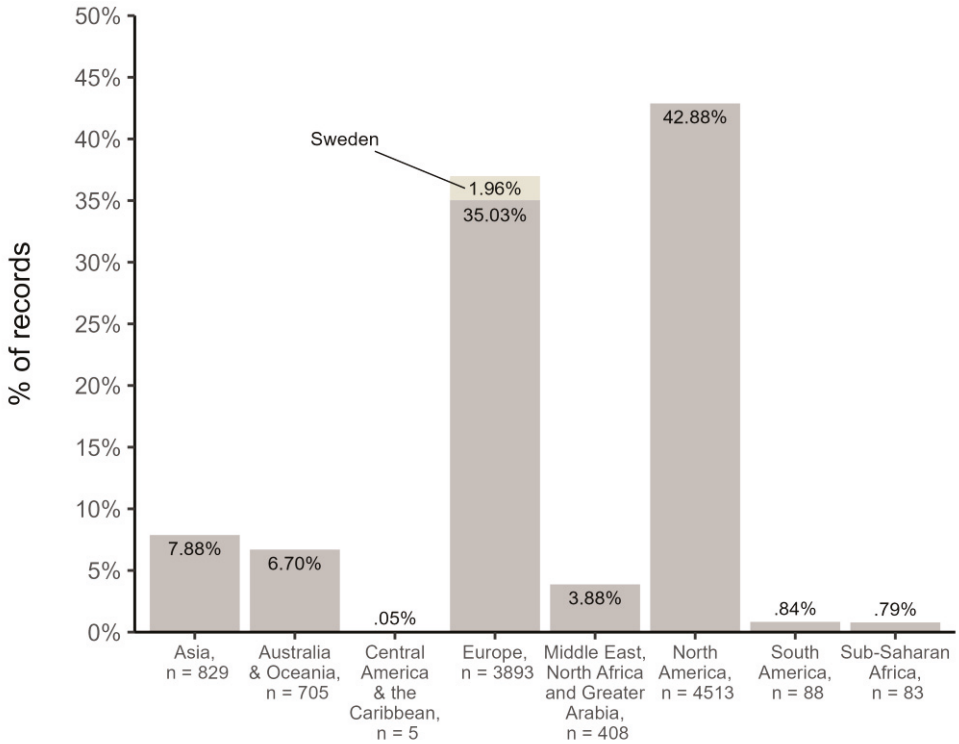

Figure 2. Number of records indexed in Clarivate Analytics' Web of Science (https://webofknowledge.com/) between 1910 and 2022 that include terminology associated with self-injury in the topic, abstract, or keywords, visualized in relation to the location of the main affiliation of the first author. Records were defined as journal articles, books, and book chapters published in the fields of social and life sciences and general internal medicine.

First, instances of humans causing intentional injury to their own bodies has been recorded across various eras and geographical regions (Favazza, 1996). However, interpretative frameworks developed in Western cultures (i.e., countries of the European Union plus Australia, Canada, Iceland, New Zealand, Norway, the United Kingdom, and the United States) dominate the scientific discourse on self-injury (c.f., Figure 2). Both in the past and currently, such Western perspectives have been hegemonic and uncritically assumed to generalize or transfer to other cultures (Chaney, 2011). Per the critical realist approach, I assume that phenomena such as self-injury are universal; however, Western understandings of self-injury are not. In accordance with authors such as Spivak (1988), I also recognize that Western understandings can be harmful when imposed on the experiences of members of

non-Western communities (for an in-depth discussion related to self-injury specifically, see Chaney, 2011; Gilman, 2012, 2013; Lester, 2012; Owens et al., 2023, among others). Therefore, acultural transferability and generalizability are not presumed in the current thesis. Members of non-Western communities should determine the extent to which any findings described in this thesis apply to their experiences.

Second, self-injury is often described pejoratively, with discourse positioning it as inherently problematic and unacceptable (Hasking, Lewis, & Boyes, 2019) or as a sickness or disease (Hasking & Boyes, 2018). For instance, Staniland et al. (2022) observed that Australian newspapers often construed self-injury in terms of an epidemic (i.e., something that spreads), and a threat or danger to society (i.e., something violent that others must be protected from). As argued by Hasking and Boyes (2018) and Hasking, Lewis and Boyes (2019), such discourse is stigmatizing because it portrays persons who self-injure as irrational, undesirable, and without volition. In contrast, in this thesis, I adopt a view that self-injury is an understandable reaction in certain contexts. While self-injury may have a negative connotation (i.e., it signifies distress), I do not view it as inherently reprehensible. I have thus taken care to avoid stigmatizing discourse, both in my own papers and in cited research, opting for ways-of-talking recently identified as preferable among those who currently or previously injured themselves (c.f., Hasking et al., 2021; Lewis, 2017). For example, I have replaced reductionist terminology such as "self-injurer" with "someone with the experience of self-injury" and describing self-injury as "a strategy" rather than "a maladaptive/bad strategy" for managing experiences. Although scholars have usually referred to the behaviour (and not the person) as "maladaptive" or "bad," such terminology can nevertheless be internalized by people with lived experience of self-injury (Lewis & Hasking, 2023). Furthermore, this denotation disregards how the adaptivity and effectiveness of any coping strategy is context-dependent (Aldao, 2013) and can invalidate the experiences of individuals who perceive that self-injury is/was a purposeful and effective coping strategy for them in a difficult situation (e.g., Lewis & Hasking, 2021b).

Chapter 2: What is self-injury?

To discuss the processes involved in starting, continuing, and especially ceasing self-injury, I first need to define what individuals who self-injure are presumed to (not) be doing. From a critical realist perspective, phenomena such as self-injury are iteratively (re)defined as humans experience and interact with them (Fletcher, 2017). Similarly, pragmatic denominators are not stagnant but provisional (Johnson & Onwuegbuzie, 2004). Accordingly, the terminology used to refer to human actions that directly injure one's physical form (e.g., cutting or hitting oneself) has varied over the years. Some applicable terms that I have identified from historical and phenomenological inquiry into self-injury (i.e., Angelotta, 2015; Chandler et al., 2011; Gilman, 2013; Jacobson & Gould, 2007; Tofthagen & Fagerstrøm, 2010) include *non-suicidal self-injury* (NSSI), *deliberate self-harm*, *self-mutilation*, and *self-injurious acts/behaviours*[1]. Among these, NSSI has been the most frequently used term since 2014 (c.f., Figure 3).

The term NSSI distinguishes between non-suicidal and suicidal self-injurious behaviours based on both the intent of the person who self-injures and the nature of the behaviour itself (Nock & Favazza, 2009). While it is challenging to make definitive conclusions concerning intent (Kapur et al., 2013; Nock & Favazza, 2009), the behaviours addressed in this thesis are typically not intended to cause death (Orlando et al., 2015) or to be accidentally or deliberately lethal (Cai et al., 2022). Therefore, throughout this thesis and the included papers, I use *NSSI* or *self-injury*/*self-injurious behaviours* to refer to self-directed behaviours that knowingly cause non-lethal damage to bodily surface or tissues, and that are not culturally (or sub-culturally) sanctioned. I elaborate further on this definition below. Moreover, since critical realism necessitates explication of the social context of a studied phenomenon, I also review historical developments in NSSI research in a Western context and explore contemporary understandings of classification of NSSI.

[1] Other applicable terms include (derivates of) *self-cutting*, *self-destructive behaviour*, *self-harming behaviour*, *self-inflicted wounds*, and *autoaggression*. Searching for records indexed in Clarivate Analytics' Web of Science (https://webofknowledge.com/) between 1910 and 2022 suggests that these terms are uncommon ($N = 55–245$) relative to other ones ($N = 929–2734$). This finding, coupled with criticism of these terms as either too narrow or too broad (c.f., Claes & Vandereycken, 2007; Germain & Hooley, 2012), meant they were not considered further.

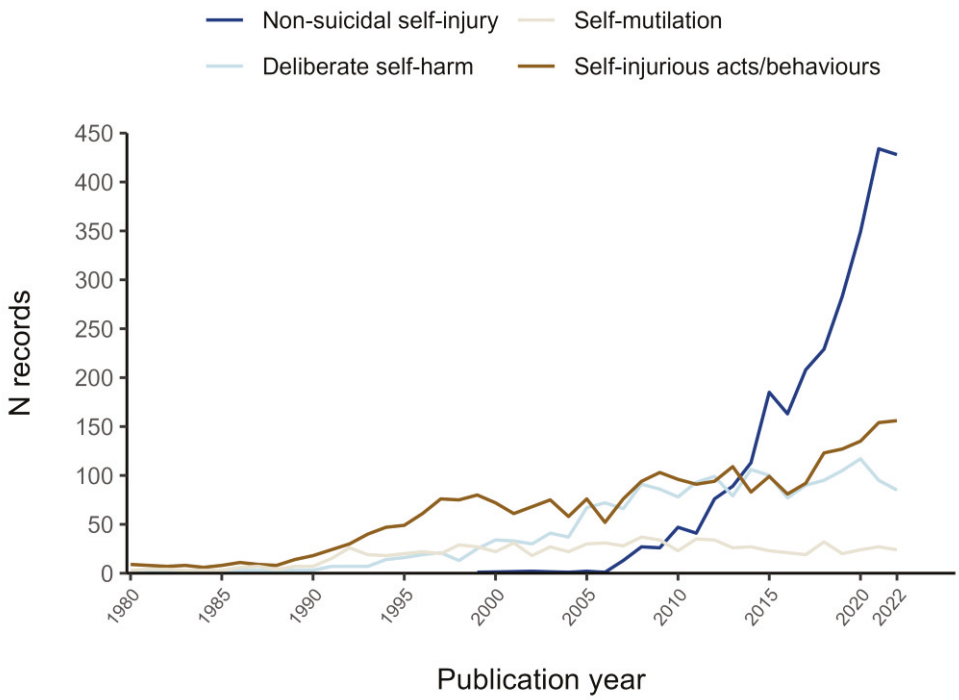

Figure 3. Number of records indexed in Clarivate Analytics' Web of Science (https://webofknowledge.com/) between 1980 and 2022 that include different terminologies for self-injury in the topic, abstract, or keywords. The count for self-injurious acts/behaviors excluded all other terminologies. Records were defined as journal articles, books, and book chapters published in the fields of social and life sciences and general internal medicine.

Historical overview

Within the Western and Swedish cultural sphere, there are several historical records of individuals who have caused tissue damage to their own body as part of cultural, spiritual, or religious contexts (Favazza, 1996; Johannisson, 1997). These traditions see self-injury variously as a method of expiating guilt, relieving sorrow, or attaining spiritual advancement (Lester, 2012), or to atone or punish oneself for religious sins or social faux pas (Favazza, 1996). One view of self-injury akin to contemporary scientific constructions – that is, an expression of distress or a weakness/vulnerability of the mind or body (Chandler et al., 2011) – became prominent during the late Enlightenment era (Chaney, 2012; Gilman, 2013). During this period, self-injury was viewed in conflict with ideals of rationality, altruism, and productivity, meaning that self-injurious behaviours were viewed as contradicting human instincts of self-preservation and social cooperation (Gilman,

2013). In accordance with this emerging pathologization of self-injury, the earliest identified clinical records of self-injury date back to the early 1800s (Chaney, 2011). These records classify self-injurious behaviours differently depending on psychiatric comorbidity (e.g., schizophrenia) and whether the person who self-injured had non-suicidal and suicidal intent (Angelotta, 2015).

One of the first psychological research articles on self-injury was a case report by L. E. Emerson in 1913. In this report, Emerson described treating a young woman who wanted to cease cutting herself. However, a larger scientific discussion about self-injury was not initiated until the 1930s (Shaw, 2002), which mostly centred on the works of K. Menninger (e.g., *Man Against Himself* from 1938). From this point until the 1950s, scholars showed increasing interest in the psychoanalytical aspects of self-awareness and identity as well as the psychological antecedents (e.g., negative affect) and consequences (e.g., tension relief) of self-injury (Gilman, 2013), in contrast to earlier discussions, which predominantly focused on the physical characteristics of the injury (Chaney, 2011). At the time, the term *self-mutilation* was commonly used in reference to self-injurious behaviours; it has since fallen out of favour because its colloquial use invokes images of bodily injury that is disabling (e.g., loss of a limb) rather than minor or moderate (e.g., bruising; Jacobson & Gould, 2007; Nock & Favazza, 2009), and because the discursive implication is that a self or body that is otherwise ideal has been (permanently) disfigured (Brickman, 2004; Chaney, 2011).

During the mid-1960s, self-injury was constructed as a problem particularly among women (Shaw, 2002), as women were considered especially susceptible to emotion dysregulation and impulsivity (Brickman, 2004). The association between self-injury and emotion dysregulation/impulsivity was formalized when self-injury was suggested to be a symptom of borderline personality disorder (BPD) in the 1950s (Gilman, 2013). BPD was later included as a diagnosis in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM; American Psychiatric Association [APA], 1980). Since then, several authors including Pattison and Kahan (1983), Favazza and Rosenthal (1990), and Muehlenkamp (2005) have argued that self-injury should be a diagnosable entity in itself. Accordingly, the newest edition of the DSM suggests NSSI as a presumptive diagnosis rather than a symptom of another disorder (APA, 2013).

Following introduction of BPD in the DSM-III in the 1980s, the research field grew rapidly until the 2000s (c.f., Figure 1 in chapter 1). In parallel, self-injury became increasingly featured in the Swedish and international news media (Skagius & Zetterqvist Nelson, 2020; Whitlock et al., 2009). Studies also observed increases in hospitalization following self-injury and self-poisoning between 1990 and 2000 in the US (Olfson et al., 2005) and UK (Hawton et al., 2003), and in Sweden between 1997 and 2007 (Beckman et al., 2010). However, no such increase was observed in non-clinical samples during the same period: Swannell et al. (2014) found no statistically discernible change in the prevalence of self-reported self-injury among

community adults and adolescents between 1990 and 2012 after adjusting for methodological factors. However, increased public awareness of self-injury at this time may have changed the way that the community engaged with it. For example, an ethnographic study by Adler and Adler (2007) described how younger people who self-injured had often encountered representations of self-injury through the media, health education, internet, or peer groups before engaging in it themselves, whereas older people who self-injured had discovered it through accident or personal experimentation. Increasing awareness might also have increased the likelihood of community help-seeking and attribution of wounds to self-injurious behaviour, as recognition of self-injury was previously isolated to the psychiatric context (Shaw, 2002). These changing public perceptions may have informed the growing interest in studying self-injury in community-based samples around the early 2000s (c.f., Ekman, 2016), rather than increasing prevalence rates in the general population per se. The project under which this thesis rests was initiated at this time as well. Along with that of Wichstrøm (2009), it was one of the first research projects to longitudinally investigate self-injury among Nordic adolescents in a non-clinical context.

Methods of self-injury

Both past and current understandings of self-injury position it as a pattern of acting (i.e., a behaviour) in a context of psychological distress (Chandler et al., 2011; Tofthagen & Fagerstrøm, 2010), but without suicidal intent or a necessarily lethal outcome (Angelotta, 2015; Gilman, 2012). However, this designation is not definite – the precise behaviours considered NSSI have varied over the years. For example, although self-cutting is now widely regarded as a hallmark behaviour of NSSI (Lengel et al., 2022), it received limited attention in research prior to the 1960s (Brickman, 2004; Shaw, 2002). Reasons thereof could be that minor cuts were previously associated with restorative bloodletting practices (Lester, 2012), while major instances that required bandaging and/or sutures were presumed to be suicidal (Chaney, 2011). Conversely, tattooing and piercing was considered pathologically self-injurious in the 1800s and into the latter half of the 1900s (Gilman, 2013), but are explicitly excluded from many contemporary definitions of NSSI (Klonsky, 2007). This is because the etiology of culturally sanctioned body modification and embellishment, including tattooing and piercing, are considered dissimilar to NSSI in the context of psychological research (Adler & Adler, 2007; Owens et al., 2023). Arguably, this suggest that actions that are neither accepted nor sanctioned in broader society, but that are not considered harmful or as signifying distress by those who practice it (e.g., scarification, injury resulting from pleasure-driven masochism or sensation play; Lantto & Lundberg, 2022; Owens et al., 2023), should be excluded as well.

According to contemporary understandings of NSSI, which are applied in the present thesis as well, behaviours considered to be NSSI when performed *in a context of psychological distress* include, for example, cutting, carving, scratching, or puncturing one's skin with foreign objects, burning bodily areas with an open flame, punching the body or hitting one's limbs/head against objects, and preventing wounds from healing (Gratz, 2001; Klonsky & Glenn, 2009; Klonsky & Olino, 2008). The method of injury does not need to cause significant tissue damage or leave a persistent physical mark (e.g., bruising, scarring) on the targeted bodily surface, but there should be some degree of pain (Lengel et al., 2022). The act should also be self-directed in the sense that the consequence (i.e., the injury) is temporally imminent and caused by the chosen method (Claes & Vandereycken, 2007). Relative to the other listed behaviours, preventing wounds from healing might be too inclusive of everyday behaviour without a link to distress (Latimer et al., 2014). Nevertheless, preventing wounds from healing is considered NSSI in the present thesis, as it is often included in contemporary measurements thereof (Borschmann et al., 2012; Latimer et al., 2013).

There is an ongoing debate on whether NSSI also encompasses trichotillomania (i.e., hair pulling) and excoriation (i.e., skin picking), which also cause bodily damage directly (Selby et al., 2015). The 11th Revision of the *International Classification of Diseases* (WHO, 2022) characterizes trichotillomania (6B25.0) and excoriation (6B25.1) as compulsive, which is not prototypical for NSSI in community individuals (Whitlock & Selekman, 2014). Therefore, trichotillomania and excoriation are excluded from the current definition. Additionally, people may engage in many behaviours that result in bodily injury or are harmful in the broader sense, such as substance use, seeking out risky sexual encounters, and restricting how they eat. However, as the pre- and post-action cognitive and emotional states related to such behaviours are considered dissimilar to that of imminent, surface-level damaging behaviours (Germain & Hooley, 2012; Muehlenkamp, Peat, et al., 2012; Zetterqvist et al., 2018), these are usually labelled as indirectly self-injurious, self-destructive, or self-harming instead. Therefore, they are not discussed or included in the definition of NSSI in this thesis.

Suicide and self-injury

NSSI is distinguished from suicidal behaviours based on the presence or absence of suicidal intention. However, categorizing self-injury solely based on intention does not always result in clear-cut distinctions. For example, an individual may engage in self-injury to divert their attention from suicidal ideation (Edmondson et al., 2016) and their motivation for self-injury may be uncertain or even change during the act itself (Holliday et al., 2018; Kapur et al., 2013). However, in a study by Orlando et al. (2015), only 1.8–2.4% of 1,525 undergraduate women with

experience of self-injury using methods under the NSSI umbrella reported that they had engaged in such behaviours with suicidal intent. Suicidal ideation is instead more likely and prevalent in other forms of self-inflicted injuries with higher lethality, such as injury by firearms or strangulation (Cai et al., 2022). Indeed, Swedish register data indicate that self-poisoning is a more common method (83.75%) than self-cutting (5.95%) in suicide attempts (Runeson et al., 2010). These findings suggest that for most adolescents who self-injure, their engagement in the behaviour is not an attempt to end their existence, but rather to alleviate or endure the challenges of life. Thus, the distinction between suicidal and non-suicidal self-injurious behaviours has utility in clinical settings (e.g., Muehlenkamp, 2005; Walsh, 2007). Additionally, some individuals with lived experience prefer this distinction, as they perceive that associating suicide with all kinds of self-injury misrepresents their intentions (Brown & Kimball, 2013; Lindgren et al., 2011).

However, many individuals who injure themselves using methods considered to be NSSI also have lived experience of suicidal ideations and suicide attempts (Edwards et al., 2023; Hamza et al., 2012). A meta-analysis by Castellví et al. (2017) indicated that previous NSSI is a strong predictor of suicide attempts in adolescents and young adults (Odds Ratio [*OR*] = 3.48), and this relationship is not moderated by contextual (e.g., stressful life events) or mental health variables. Thus, there may be a unique link between NSSI and suicidal behaviour. According to Joiner (2005), continued engagement in NSSI may habituate individuals to the fear and presumed pain associated with suicide. In this way, engagement in NSSI may reinforce the capability for suicide in those individuals who already desire to end their lives.

Another explanation comes from the third variable theory, which suggests that the relationship between NSSI and suicide attempts is partly spurious, with another variable increasing the likelihood of both (Hamza et al., 2012). NSSI and suicide attempts do share many overlapping risk factors such as experiences of physical/sexual abuse, trauma symptoms, and depression (Andover et al., 2012), but the associations are usually stronger for suicide attempts than for NSSI (Edwards et al., 2023; Mars, Heron, Crane, Hawton, Kidger, et al., 2014). The results of these studies indicate that NSSI may be a viable way for people to endure such difficult situations until escalating difficulties and suicide ideations cannot be sufficiently managed.

To summarize, there is evidence that non-suicidal and suicidal self-injurious behaviours have distinct characteristics, but individuals may engage in both at the same time and both behaviours may have similar underlying causes. Consequently, suicidal and non-suicidal behaviours might be better conceptualized as endpoints on a continuum rather than as distinct categories (Liljedahl & Westling, 2014). This is the perspective that I adopt in this thesis as well. This means that "non-suicidal" may be a useful heuristic for thinking about various kinds of self-injury and reasons for injuring oneself, but it does not describe the definitive state and intentions of each person who self-injures. Rather, it signifies a low likelihood that a particular

self-injurious behaviour is intended to or will result in death. Therefore, I will describe findings from various studies using the term NSSI even when those studies use other terminology with a similar but not necessarily identical operational range. Use of NSSI as a general category is supported by research indicating that self-directed and imminent self-injurious behaviours can be hierarchically ordered on a single dimension (Latimer et al., 2012; Orlando et al., 2015), meaning that the inclusion of some methods with higher lethality and/or more prominent suicidal intent does not result in a qualitatively different construct. One example is *deliberate self-harm*. This term sometimes encompasses suicidal acts such as self-poisoning (Millard, 2015) while at other times explicitly excludes such acts (e.g., Gratz, 2001, p. 253: "Deliberate self-harm [is] the deliberate, direct destruction or alteration of body tissue without conscious suicidal intent").

Further classifications of self-injury

Within the delimitation of self-injurious behaviours as self-directed and non-suicidal, there are several additional suggestions of how observed instances can be classified. These classifications include the demarcation between intentional and accidental NSSI or between repetitive and infrequent engagement, as well as when NSSI should be considered a separate clinical entity.

One of the most influential classification systems of NSSI was proposed by Nock and Favazza (2009), who divided it into three types: that which occur "among normally developing, nonpsychotic individuals" (p. 14), stereotypic self-injury related to pervasive developmental disorders, and major self-injury related to psychotic disorder and intoxication. The latter two instances are commonly distinguished from NSSI in order to establish self-injury as *deliberate* (e.g., International Society for the Study of Self-Injury, 2023), thereby excluding accidental injuries. This means that a person who self-injures should not only be able to verbalize an understanding of the physical consequences of the behaviour (albeit not necessarily at the exact moment the injury occurs, e.g., due to a mental health crisis), but also should be an aware agent, such that their consciousness is unaltered during the act and that NSSI is purposeful. Using *deliberate* as shorthand for this differentiation can be problematic because it implies that NSSI is premeditated, which is not always the case. For example, NSSI may follow very shortly after an urge (Hepp et al., 2020) and individuals might struggle to articulate why they self-injured or even change their views of why they did so (Kapur et al., 2013). Consequently, in this thesis, I prefer to describe the distinction using the terms *intentional* and *knowingly*.

When a person intentionally and knowingly self-injures, Nock and Favazza (2009) suggests further classification into mild, moderate, or severe forms of NSSI. These

modifiers reference the frequency of engagement and the likelihood of needing medical treatment or subsequent scarring. The former has become the most prominent criterion in the literature, with several authors attempting to estimate frequency cut-offs, such that exceeding a given threshold of NSSI frequency would be more indicative of psychological distress and therefore more clinically relevant. Inspired by the diagnostic criteria for *NSSI disorder* (elaborated on below), Brunner et al. (2014) suggested 1–4 lifetime acts as occasional NSSI and ≥5 acts as repetitive NSSI among European adolescents. Ammerman et al. (2017) empirically validated comparable cut-off points using structural equation modelling trees, showing that groups of undergraduate students with 1–5 and ≥6 acts in the last year represented increasing endorsement of symptoms indicative of psychological distress. However, other authors have argued that these cutoffs are too inclusive (e.g., Muehlenkamp & Brausch, 2016; Muehlenkamp et al., 2017), finding that a substantial number of individuals with a normative mental health profile reported to have engaged in NSSI ≥6 times in the previous six months (Stanford, Jones, & Hudson, 2017). Moreover, any frequency cut-off fails to account for single episodes that might warrant extensive medical treatment or have strong personal meaning (c.f., Donskoy & Stevens, 2013). Frequency also fails to account for versatility in the number of methods used (e.g., Bjärehed et al., 2012). This suggests a complex balance between sensitivity and specificity when it comes to classifying NSSI into milder or severer forms. This thesis theoretically and empirically relies on Brunner and colleagues' (2014) definition of infrequent NSSI as 1–4 instances and repetitive NSSI as ≥5 instances, while acknowledging that such quantification will invariably fail to account for the full context.

Diagnosing self-injury

As suggested by the historical overview, there are ongoing discussions of whether NSSI should remain a symptom of BPD and/or whether it should be a diagnosable entity in itself. There is a strong association between BPD and NSSI (Fox et al., 2015; Stead et al., 2019), but other studies indicate that NSSI is not unique to BPD (Buelens, Costantini, et al., 2020; Glenn & Klonsky, 2013). For example, a meta-analysis by Bentley et al. (2015) suggested that NSSI is equally prevalent among individuals diagnosed with a variety of mood-, affective-, and anxiety-related mental health problems. Diagnosing self-injurious behaviour separately might also aid clinical treatment efforts and unify the conceptualization of NSSI overall (Zetterqvist, 2015). Accordingly, *NSSI disorder* was added as a tentative diagnosis in need of further empirical testing in the DSM-5 (APA, 2013). The diagnostic criteria entail the characteristics of NSSI already discussed, including that the method of injury should not be socially sanctioned, that NSSI occurs in contexts of intra- or interpersonal distress, that the intent is non-suicidal, and that it is not exclusive to substance use, psychotic episodes, or repetitive stereotypies. Moreover, the person should have self-injured on ≥5 days in the past year (similar to the

definition of repetitive NSSI) and NSSI engagement should cause significant distress or impair everyday functioning.

Several studies have investigated the prevalence of NSSI disorder in community adults (0.2–0.3%; Andover, 2014; Benjet et al., 2017; Plener et al., 2016), college students (0.8%; Kiekens et al., 2018), and adolescents (3.1–7.6%; Buelens, Costantini, et al., 2020; Manca et al., 2014; Zetterqvist et al., 2013). The prevalence of NSSI is all these populations is consistently lower than the prevalence of self-injurious behaviour overall (Muehlenkamp, Claes, et al., 2012; Swannell et al., 2014), which is to be expected given that many who self-injure do not consider it as *a* or *the* problem for them (Long et al., 2015; Shaw, 2006). In line with the understanding that NSSI may not be a problem for everyone, the criterion that NSSI should cause impairment and distress is quantitatively one of the most important in distinguishing whether NSSI disorder is a relevant classification or not in community adolescents (Buelens, Luyckx, et al., 2020). However, this criterion is also most at risk of being disregarded when researchers and clinicians evaluate whether NSSI engagement is pathological (Lengel & Mullins-Sweatt, 2013). Moreover, NSSI might be viewed as a trans-diagnostic rather than a separate phenomenon, as it is more strongly related to general psychopathology than any specific diagnosis (Bentley et al., 2015; Wang & Eaton, 2023). In other words, diagnosing NSSI disorder without attending to individual phenotypes within the psychopathological network (c.f., Lydon-Staley et al., 2019) might diminish the importance of the underlying concerns that people with lived experience consider as *the* problem for them (Lewis et al., 2017).

Consequently, medicalizing NSSI (i.e., defining it in medical terms or considering it to be a medical problem; Conrad, 1992) carries the risk of the behaviour overshadowing the lived context of the person who self-injures (Chandler et al., 2011), especially in community populations (Ekman, 2016; Lewis & Hasking, 2021b). Since this thesis discusses NSSI in a community (which entails but does not centre on clinical populations), NSSI will not be considered as a diagnosable entity or isolated pathology/behavioural dysfunction. Instead, following the perspective of Lewis and Hasking (2021a), I regard NSSI as a behaviour indicative of contextual and psychological distress via its strong relatedness to such issues within a complex network of inter- and intraindividual factors (c.f., Lydon-Staley et al., 2019). Thus, higher frequency of engagement is interpreted as indicative of greater perceived distress, and distress is considered the primary concern rather than NSSI engagement per se. Consequently, intervening to cease NSSI specifically is positioned as less important than addressing the psychosocial context as a whole when promoting mental health and well-being among community adolescents and young adults with the experience of NSSI. However, stopping self-injury may be necessary when it is life-threatening, severe enough to risk physical disability, and/or subjectively distressing. In such circumstances, focusing on NSSI before addressing underlying adversities can be warranted. Therefore, the findings of this

thesis have limited generalizability and transferability to clinical contexts, where such presentations are more likely (Horvath et al., 2020) and individuals are more likely to desire interventions that target NSSI specifically (Tofthagen et al., 2017).

Chapter 3: Why do some adolescents self-injure?

Having defined NSSI (what it is and what it is not), I now shift to exploring why some individuals start and continue to self-injure, which is also necessary to understand the cessation process. Most individuals retrospectively report that they started to self-injure at around 12.5−14 years old (Gandhi et al., 2018; Gillies et al., 2018), and in longitudinal studies, a prevalence peak is often observed around this age or about a year afterwards (Moran et al., 2012; Turner et al., 2021). Since this is around the time when the participants included in this thesis were surveyed in adolescence, I focus on NSSI among adolescents in this chapter. After approximating how many adolescents have experience of NSSI, I discuss two psychosocial models (i.e., the integrated model and the cognitive-emotional model) describing the underlying reasons for some community adolescents to start and continue to self-injure. At the end of the chapter, I describe the psychosocial outcomes in adulthood of having lived experience of NSSI in adolescence (to which further nuance is added in the next chapter).

Prevalence of self-injury

Meta-analyses suggest that the pooled lifetime prevalence of NSSI (i.e., having self-injured at any time) among community adolescents (10−17 years old) is estimated at 16.9−18.0% (Gillies et al., 2018; Muehlenkamp, Claes, et al., 2012; Swannell et al., 2014). Zetterqvist and colleagues (2021; see also 2013; 2018) observed comparable rates of lifetime NSSI among Swedish adolescents with a single-item assessment in 2011 (17.2%, mean age = 16.46) and 2014 (17.7%, mean age = 17.96), but noted a substantial increase to 26.7% between 2020 and 2021 (mean age = 18.19). Both the 2011−2014 and 2020−2021 estimations are close to the lower and upper bounds of the aggregate prevalence rate of NSSI in studies conducted within this period (22%, 95% Confidence Interval [CI] = 17.9−26.6; Xiao et al., 2022). It is not certain if the prevalence of NSSI among adolescents has increased since the 2010s (c.f., Gillies et al., 2018) or if the COVID-19 pandemic (from 2020 onwards) had a significant impact (Kapur et al., 2021). However, these discussions

are beyond the scope of the present thesis, which relies on adolescent data collected between 2007−2008.

While about a fifth of community adolescents have experience of NSSI, most of them do not injure themselves repetitively. In a study of adolescents from several European countries (mean age = 14.9), the incidence of any lifetime NSSI (estimated with a multi-item questionnaire) was 27.6%, with 19.7% reporting infrequent NSSI and 7.8% reporting repetitive NSSI (Brunner et al., 2014). These numbers are similar to those that Xiao et al. (2022) estimated by aggregating prevalence for infrequent (20.3%) and repetitive NSSI (8.3%) across several adolescent samples. However, these prevalence estimates of repetitive NSSI are notably lower than are those from Swedish community samples: 14.4% in Bjärehed and Lundh (2008; mean age = 14.1) and 19.3% in Zetterqvist et al. (2013; mean age = 16.46). It should be noted that these Swedish studies assessed 9−10 different behaviours, whereas Brunner et al. (2014) assessed six and Xiao et al. (2022) did not balance prevalence estimates with the number of assessed methods. Therefore, the higher prevalence estimates of repetitive NSSI among Swedish community adolescents do not necessarily indicate that NSSI is more common in Sweden than in other countries. This is because estimated prevalence of NSSI depends on how it is defined and operationalized, such that assessing multiple methods of self-injury results in higher rates than do single-item measures (Muehlenkamp, Claes, et al., 2012; Swannell et al., 2014).

Among the behaviours included in the NSSI umbrella, cutting oneself is reported as the most common method (45−80%) of NSSI among adolescents who currently self-injure (Bjärehed & Lundh, 2008; Gillies et al., 2018; Moran et al., 2012; Sornberger et al., 2012; Victor et al., 2018). In the same studies, the prevalence of self-cutting was followed by scratching (28−58%), self-battery (22−43%), and burning oneself (10−23%). However, most adolescents who self-injure report that they are injuring themselves using several methods rather than any particular one (Xiao et al., 2022).

Psychosocial models of starting and continuing to self-injure

There are several models of why an individual may start and continue to self-injure. In this thesis, I primarily draw from two slightly different but complementary theories: the integrated theoretical model (Figure 4) by Nock (2009) and the Cognitive-Emotional Model of Non-Suicidal Self-Injury (CEM-NSSI; Figure 5) by Hasking et al. (2017). I chose these models because they, in line with critical-realist understandings, present a non-reductionist view of NSSI by focusing on psychosocial factors (e.g., life events, qualia of emotions, cognitions, and social

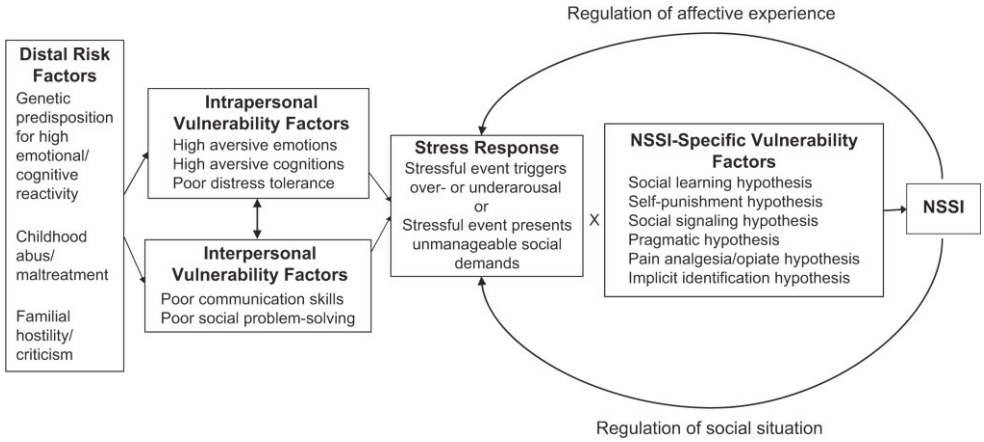

Figure 4. An integrated theoretical model of the development and maintenance of non-suicidal self-injury, identical to how it is presented in Nock, M. K. (2009). Why do people hurt themselves?: New insights into the nature and functions of self-injury. *Current Directions in Psychological Science*, 18(2), 78–83. https://doi.org/10.1111/j.1467-8721.2009.01613.x Copyright © 2009 Association for Psychological Science. Reprinted by permission of SAGE publications

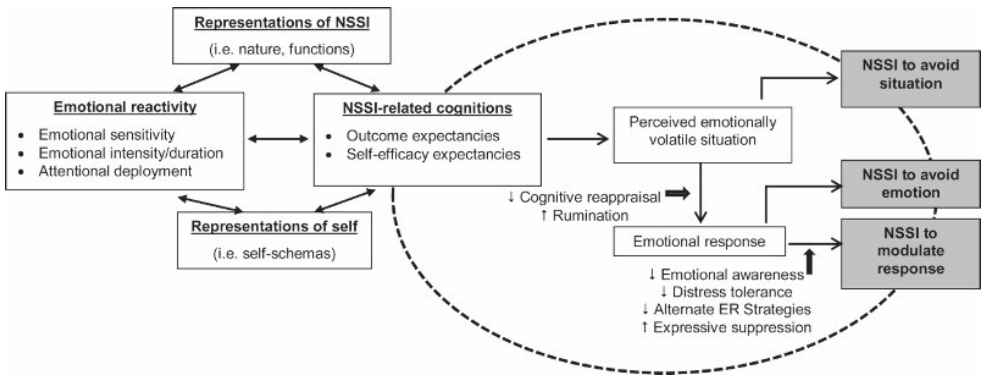

Figure 5. The Cognitive-Emotional Model of Non-Suicidal Self-Injury (CEM-NSSI). From Hasking, P., Whitlock, J., Voon, D., & Rose, A. (2017). A cognitive-emotional model of NSSI: Using emotion regulation and cognitive processes to explain why people self-injure. *Cognition and Emotion*, 31(8), 1543–1556. https://doi.org/10.1080/02699931.2016.1241219 Copyright © Taylor & Francis Ltd, http://www.tandfonline.com Reprinted with permission.

interactions). The integrated model and the CEM-NSSI are complex models and testing them in their entirety is not possible within any single study. Therefore, evidence for their validity should be considered pragmatically (e.g., whether they facilitate interpretation of different findings, and can inform research and clinical praxis; Johnson & Onwuegbuzie, 2004) rather than hypo-deductively.

In short, the integrated model and CEM-NSSI both suggest that individuals who experience significant distress due to past *adverse experiences and events* such as maltreatment, victimization, and neglect can find it difficult to manage more recent stressors because of problems with *emotion regulation, coping, and self-efficacy/agency*. For instance, individuals may have particularly intense emotional experiences, rely on coping strategies intended to avoid or escape difficult situations, or perceive themselves as unable to act in a manner that would resolve the situation. Such problems, coupled with adversity, may also lead to negative outcomes for *mental health and well-being* (e.g., elevated levels of depression and stress). Meanwhile, if individuals hold *representations and cognitive beliefs about self-injury* – that NSSI could help them achieve a desired outcome and that they are capable of injuring themselves – they may be more likely to engage in NSSI as a coping mechanism to manage recent stressors. Engagement in NSSI may, in turn, contribute to further contextual and psychological distress, as well as modify or reinforce one's capability to self-injure and outcome expectancies. This bidirectionality is what contributes to *repetitive self-injury and reciprocity*, which can further reduce an individual's ability and intention to manage current emotional experiences in other ways. In this way, NSSI is continued over time.

Below, I provide a theoretical elaboration of the different components of the integrated model and CEM-NSSI. Additionally, I will highlight some of the connections to other models of NSSI.

Adverse experiences and events

Both the integrated model and CEM-NSSI position adverse experiences and events as relevant within the stress response or emotionally volatile situation that triggers a specific episode of NSSI. Additionally, the integrated model acknowledges these experiences as distal risk factors for engagement in NSSI. Quantitative studies consistently show that reports of recent adversity predict NSSI engagement in adolescents at different time intervals. For example, Hasking et al. (2013) and Kaess et al. (2020) found that recent adversity predicted NSSI onset after 12 months, Voon et al. (2014) found a similar relationship after 24 months, and Keenan et al. (2014) found that this association held over a period of 5 years, but with a girl-only sample. A meta-analysis by Liu et al. (2016) has also found that general life stress and life problems were positively related to concurrent frequency of engagement in NSSI (OR_{pooled} [95% CI] = 1.33 [1.08−1.63]). This association has also been found prospectively over 6- (Chen et al., 2023), 12- (Townsend et al., 2022; Wan et al.,

2019) and 18-month measurement intervals (Guerry & Prinstein, 2010) in adolescent samples. In accordance with these quantitative studies, qualitative studies have presented narratives wherein NSSI is positioned as the ultimate outcome of cumulative life stress and conflict (Donskoy & Stevens, 2013; West et al., 2013). Interviewees have also ascribed specific events as bringing about NSSI (Curtis, 2016; Wadman et al., 2018). With regards to such specific adverse experiences and events, quantitative studies have consistently shown a strong association between the initiation and persistence of NSSI and childhood maltreatment, including sexual abuse/assault, physical abuse/assault, and neglect (Klonsky & Moyer, 2008; Lang & Sharma-Patel, 2011; Liu et al., 2018; Serafini et al., 2017). In addition to childhood maltreatment, poor family functioning characterized by elevated levels of criticism, conflict, and a lack of support (which may not reach the threshold of maltreatment) may also increase the likelihood of NSSI engagement (Hilt et al., 2008; Tatnell et al., 2014; Victor et al., 2019). Other relevant adversities include peer problems such as being subject to victimization or bullying (Serafini et al., 2023; Sigurdson et al., 2018) or conflict related to bullying perpetration (Heerde & Hemphill, 2019).

Emotion regulation, coping, and self-efficacy/agency

Individuals who have previous experience of adverse events are statistically more likely than are others to report problems with managing their emotional response to more recent experiences (Hofmann et al., 2012). Such problems can be impacted by neuropsychological factors as well, including sensitivity and appraisal of emotional stimuli or the intensity and duration of the emotional response (Yih et al., 2019). According to Compas et al. (2017), these processes should be referred to as *emotion regulation* when referring to the experience of emotion in everyday life. On the other hand, *coping* refers to similar processes but specifically in the context of stressful events and circumstances. Coping also extends beyond emotional experience to conscious cognitive and behavioural efforts related to emotion management (c.f., Folkman & Lazarus, 1985). In other words, emotion regulation refers to the processes related to changing one's internal state, whereas coping entails the methods used for managing the situation as a whole. Consequently, these two concepts should be seen as interdependent rather than distinct in understanding emotion management (Compas et al., 2017).

Both the integrated model and CEM-NSSI suggest that emotion dysregulation and over-reliance on avoidant/escape-oriented coping strategies are central to explaining why individuals engage in NSSI. This perspective is shared by many other contemporary models of NSSI engagement (e.g., Chapman et al., 2006; Hooley & Franklin, 2018; Selby & Joiner Jr, 2009). Emotion dysregulation refers to difficulties in changing the intensity/temporality of an emotional response (c.f., Aldao, 2013), whereas avoidant/escape coping describes strategies for reducing and

eliminating anticipated or current experiences rather than confronting or proactively managing them (c.f., Haskell et al., 2020). Reviews and meta-analyses provide robust evidence for a cross-sectional relationship between NSSI engagement, emotion dysregulation, and reliance on avoidant/escape-oriented coping strategies (Brereton & McGlinchey, 2020; Guerreiro et al., 2013; Haywood et al., 2023; Wolff et al., 2019). Moreover, both constructs predict reports of starting to self-injure within 1-year (Burke et al., 2018; Robinson et al., 2019; Stallard et al., 2013; Tatnell et al., 2014) and 2-year study periods (Baetens et al., 2014; Voon et al., 2014).

The relationship between NSSI, emotion dysregulation, and avoidant/escape-oriented coping can be explained by how self-injury occurs when dysregulated emotions become unendurable and unavoidable (Selby & Joiner Jr, 2009). As the pain and endorphins that results from injury may disrupt this cycle (Hooley & Franklin, 2018), NSSI can be a viable way to regulate and cope with intense or unwanted experiences when alternatives are perceived as insufficient or unavailable (Wadman et al., 2020; Wolff et al., 2019). Importantly, unavailability should not be solely interpreted as a lack of awareness, as it also implies an inability to consistently and effectively implement other strategies for emotion management within the current context (Ekman & Jacobsson, 2021). According to Bandura (1982, 2006), this inability can be described as a lack of self-efficacy or a lack of agency. Self-efficacy refers to one's self-appraised capability of purposefully engaging with one's environment (Bandura, 1982), while agency is about constructing oneself as someone who can act within current circumstances towards a visualized outcome (which requires a degree of self-efficacy; Bandura, 2006).

Quantitative research on NSSI has primarily relied on the self-efficacy construct, which has been supported as a longitudinal moderator and mediator between poor family functioning and NSSI engagement in adolescents (Guo et al., 2022; Tatnell et al., 2014). Those adolescents who reported starting to self-injure during Tatnell et al.'s (2014) study also showed a concurrent decrease in self-efficacy. As many qualitative methodologies can explore the sense-making of capability beyond self-appraisal (c.f., Willig, 2019), qualitative studies have instead focused on the construct of agency and the contextual constraints thereof. Constraints on agency can, in addition to the aforementioned adverse experiences and events (Sinclair & Green, 2005), be imposed by societal structures (e.g., age of majority restricting access to alcohol; Ekman, 2018) and the emotional situation itself (e.g., emotional turmoil making one unable to engage in other regulatory behaviours; Donskoy & Stevens, 2013). Among people with lived experience of NSSI, these constraints have been strongly ascribed to starting to self-injure and increasing frequency of NSSI engagement. Such descriptions include how societal structures situate NSSI as the only available and effective method for coping with adverse experiences (Ekman & Jacobsson, 2021), or how NSSI could be used to reinstate control over adverse experiences that fuelled an overwhelming emotional reaction (Csordas & Jenkins, 2018).

Mental health and well-being

Research has suggested that difficulties in regulating negative emotions/coping with difficult situations can contribute to the development of depression, anxiety, and stress among adolescents (McLaughlin et al., 2011; Richardson et al., 2021). Both the integrated model and CEM-NSSI suggest that mental health problems, in combination with emotion dysregulation and avoidant/escape-oriented coping strategies, may lead to over-arousal (e.g., intense feelings of shame, sadness, and anxiety) or under-arousal (e.g., disassociation) in response to current stressors, which in turn leads to an increased likelihood of engaging in NSSI. Different reviews and meta-analyses have indeed suggested that mental health problems are an important correlate and risk factor for NSSI engagement (Fox et al., 2015; Plener et al., 2015; Rahman et al., 2021; Sheehy et al., 2019). The association between mental health problems and NSSI can also be observed or explained by a third variable, such as sleep problems (Crowley et al., 2018). Sleep problems are associated with increased frequency of injury over one month (Asarnow et al., 2020) and one year (Latina et al., 2021), as well as with reports of starting to engage in NSSI within a year for girls only (Lundh et al., 2013).

Neither the integrated model nor the CEM-NSSI explicitly acknowledges well-being. Well-being entails positive aspects of mental health beyond the mere absence of depression, anxiety, and other mental health problems (Keyes et al., 2010); it is a broad concept encompassing positive emotion (e.g., happiness, joy), life satisfaction, flourishing, optimism, purpose in life, and self-acceptance (Hone et al., 2014; Kashdan et al., 2008; Willen et al., 2022). Hooley and Franklin (2018) identified several empirical studies that suggest that a lack of self-acceptance (e.g., being highly critical of oneself) is a risk factor of NSSI, whereas positive self-representations (e.g., self-compassion, self-esteem) may act as a protective factor against NSSI engagement. Similarly, Muehlenkamp (2012) identifies positive body regard (i.e., having a positive relation with, attitude toward, or experience of one's own body) can protect against NSSI. These well-being factors might buffer against intentionally and knowingly injuring one's physical form as well as from the overly self-critical thoughts and intense feelings of blame and shame from which one wants to escape or that may prompt self-punishing ideations. Therefore, a lack of well-being may also be a contributing factor for NSSI engagement.

Representations and cognitive beliefs about self-injury

Experiences of adversity, difficulties with emotion regulation/coping, lack of self-efficacy/agency, mental health problems, and low well-being are all multifinal with respect to NSSI engagement (Hasking et al., 2017) – that is, they cannot fully account for why someone self-injures themselves instead of engaging in some other behaviour (e.g., seeking support from others, substance use, hurting others) to

manage different stressors (c.f., Cicchetti & Rogosch, 1996). Consequently, both the integrated model and CEM-NSSI use representations of NSSI (e.g., what it is, what it does) and NSSI-related cognitions (e.g., hypotheses about expected outcomes of injury and perceived capability to injure oneself) to explain why someone that experiences any or all the aforementioned diatheses injures themselves (or does not).

Representations of NSSI are inherently social (Nock, 2009), and can be learnt from mass media (Adler & Adler, 2007), the internet (Bell, 2014), or from one's social networks (e.g., from a relative or friend who self-injures; Quigley et al., 2017). Learning about NSSI can include learning about how one can injure oneself and the potential consequences (Jarvi et al., 2013), which in turn shape one's outcome expectancies (Hasking et al., 2017). For instance, a young person who has heard that NSSI can reduce negative arousal or communicate distress might self-injure when other strategies have failed to alleviate their distress or produce a desired response from their environment (Nock, 2008). These different expectancies can be categorized according to the four-functional model of NSSI (e.g., Bentley et al., 2014), a behavioural model of NSSI engagement that proposes two dichotomous and intersecting dimensions of how NSSI is reinforced (i.e., more likely to be repeated) through its expected outcomes. One dimension describes whether the NSSI serves an intrapersonal or interpersonal context while the other describes whether it serves to increase positive outcomes or ones that avoid/mitigate negative ones. These dimensions allow for classification of four functions of NSSI: i) intrapersonal negative (e.g., to decrease a negative/unwanted state), ii) intrapersonal positive (e.g., to induce a positive/wanted state); iii) interpersonal negative (e.g., to resolve social conflict); and iv) interpersonal positive (e.g., to generate a desired social event). Both the integrated model and CEM-NSSI recognize the intra- and interpersonal dimension of outcome expectancies, such that NSSI can be intended to regulate an emotional experience/social situation (integrated model) and/or be a method for modulating/avoiding emotion or avoiding a social situation (CEM-NSSI). A meta-analysis by Taylor et al. (2018) suggests that intrapersonal reasons for engaging in NSSI are more commonly reported than are interpersonal ones (74% vs 44%), and quantitative evidence is stronger for the intrapersonal negative rather than positive function (Perini et al., 2021). Nevertheless, descriptions of using NSSI to feel something (even pain) or to communicate distress or disrupt an ongoing relational conflict are present in the literature as well (Edmondson et al., 2016; Peel-Wainwright et al., 2021).

Although representations are social, increasing awareness of NSSI among adolescents is more helpful than it is harmful, as it corrects misconceptions, reduces stigma, and validates firsthand experiences (Lewis & Seko, 2016). Moreover, there is no evidence of any iatrogenic effects of informing high school students about NSSI (Jarvi et al., 2013). This aligns with the view that actual engagement in NSSI is determined by one's perceived capability (i.e., self-efficacy) for self-injury rather

than the representation itself (Hasking et al., 2017). Hooley and Franklin (2018) discuss capability for NSSI as constituted by one's readiness to overcome barriers to NSSI engagement; such barriers include instinctive aversions to NSSI-related imagery (e.g., blood, wounds) and pain, which are weighed against the perceived benefits of the behaviour as well as motivations (e.g., viewing pain as deserved) and means for actually completing the behaviour. Another barrier is social norms, such that NSSI is frowned on by the public (Staniland et al., 2021). Social norms may be bypassed by keeping NSSI hidden from others (Long, 2018) or intentionally broken to convey the extent of one's distress (Nock, 2008).

Repetitive self-injury and reciprocity

According to both the integrated model and the CEM-NSSI, NSSI engagement is the result of equifinal processes in that it is a common outcome of many differing factors (c.f., Cicchetti & Rogosch, 1996). The processes underlying NSSI may also change as the intra- and interpersonal consequences reinforce and expand previous outcome expectancies (c.f., Bentley et al., 2014), leading NSSI to be repeated across different contexts. This has been supported by momentary assessments showing that individuals report several functions of NSSI within the same episode and over time (Coppersmith et al., 2021). Moreover, people who engage in NSSI may become less confident in their ability to resist such behaviour, making them more likely to repeatedly self-injure (Dawkins et al., 2019).

Aside from the bidirectionality between NSSI and related representations/ cognitions, there is also a reciprocal relationship between NSSI and other associated risk factors and antecedents. Several cross-sectional quantitative studies support a positive association between frequency of engagement and distress. These have suggested that repetitive, as compared to infrequent, engagement in NSSI among adolescents is associated with reports of more prevalent adversity (Brunner et al., 2014; Cerutti et al., 2011; Madge et al., 2011; Manca et al., 2014); more pronounced problems related to anxiety, depression, and sleep problems (Asarnow et al., 2020; Brunner et al., 2014; Madge et al., 2011); and more extensive difficulties with coping (Manca et al., 2014). Adversity, psychological difficulties, depressive symptoms, and self-esteem have also been shown to differentiate people who report continued, repetitive engagement in NSSI from those who report low/no engagement over a 1-year (Bjärehed et al., 2012; Townsend et al., 2022; Wang et al., 2017) and a 2-year period (Barrocas et al., 2015; Tilton-Weaver et al., 2019). In addition to cross-sectional and baseline differences, NSSI has been suggested to reciprocally maintain regulatory difficulties (Robinson et al., 2019), general psychological distress/problems (Buelens et al., 2019; Lundh, Wångby-Lundh, & Bjärehed, 2011), and insomnia (Latina et al., 2021) over 1–3 years. Moreover, a longitudinal study by Turner et al. (2021) suggests that for each year of continued engagement in NSSI, there are incremental changes such as increased anxiety and

reduced physical self-concept (i.e., perceived physical health and body satisfaction). When combined with the multiple and reinforcing reasons for NSSI, such experiences of contextual and psychological distress that does not improve – and sometimes worsens – may foment the perception that one is not able to manage their distress without NSSI (Gray et al., 2021; Long et al., 2015).

Psychosocial outcomes of self-injuring in adolescence

The psychosocial models described in the previous section position NSSI in relation to considerable contextual and psychological distress. Consequently, self-injuring in adolescence may be a *marker* of negative outcomes[2] later in life as well, indicating a higher likelihood of experiencing mental health problems and low well-being in young adulthood. NSSI engagement during adolescence may also be considered a *risk factor* of negative outcomes independent of other relevant predictors such as its antecedents (e.g., psychological distress, emotion dysregulation). A review by Plener et al. (2015) indicates that most longitudinal studies on the outcomes of NSSI in adolescence do not conduct follow-ups after 17 years of age. To my knowledge, there are only five studies that have examined the psychosocial outcomes of self-injuring in adolescence among (young) community adults. These studies are parts of projects conducted in the UK (ALPAC; e.g., Mars, Heron, Crane, Hawton, Lewis, et al., 2014), Australia (VAHCS; e.g., Borschmann, Becker, et al., 2017), Canada (V-HYS; Turner et al., 2021), Switzerland (z-proso; Steinhoff et al., 2021), and Norway (Wichstrøm, 2009).

The findings of these studies are compiled in Table 1. Overall, these studies suggested that self-injuring in adolescence is a risk factor of depression, anxiety, low levels of well-being (i.e., self-acceptance and environmental mastery, the latter of which is akin to self-efficacy), psychiatric hospital admission, and high-risk consumption of alcohol and other substances in young adulthood (19−25 years old). Moreover, engaging in NSSI in adolescence is associated with depression, anxiety, and high-risk alcohol and substance consumption in adulthood (35 years old), but not to a statistically significant degree after other adjusting for other predictors (including gender identity, parental socio-economic status, and internalizing/externalizing or depressive symptoms). Moreover, there are a particularly strong odds ($OR = 4.60−5.27$) for NSSI engagement in young adulthood (21−22 years old). However, reporting NSSI in adolescence was not a consistent marker or risk factor of poorer socio-economic status (e.g., educational attainment, financial strain) in (young) adulthood.

[2] I use the word “outcomes” not to imply a causal relation, but rather a relationship that is informative in the descriptive sense.

Table 1.
Comparisons of Adulthood Outcomes Between Individuals Without (0) and With (1) Reported Experience Of NSSI in Adolescence

	Borschmann, Becker, et al. (2017)		Mars, Heron, Crane, Hawton, Lewis, et al. (2014)		Steinhoff et al. (2021)	Turner et al. (2021)	Wichstrøm (2009)
OR [95% CI], *p*	Unadjusted	Adjusted[a]	Unadjusted	Adjusted[b]	Unadjusted	Adjusted[c]	Unadjusted
NSSI assessed at	15−18 years		16.0 years		13 years	15.5 years	16.5 years
Outcome(s) assessed at	35.0 years		18 years (behavioral & psychological outcomes), 19 years (SE outcomes), 21 years (NSSI)		20 years	25 years	22.1 years
Psychological outcomes							
Depressive disorder	1.61 [1.51−1.72], <.001	1.11 [.61−2.01], .74	2.51 [1.77−3.55], <.001	2.21 [1.55−3.15], <.001			
Anxiety disorder	1.92 [1.79−2.04], <.001	1.17 [.65−2.11], .61	2.53 [1.87−3.41], <.001	2.15 [1.57−2.95], <.001			
Utilized mental health services					2.02 [1.48−2.75], <.001		
Psychiatric hospital admission					9.01 [5.30−15.32], <.001		
Enviromental mastery						.37, <.001	
Self-acceptance						.51, .034	
Behavioural outcomes							
NSSI			4.60 [3.23−6.54], <.001	4.48 [3.13−6.41], <.001			5.27 [2.32−12.00], <.001
Smoking regularly	2.00 [1.89−2.12], <.001	1.19 [.70−2.01], .53	2.51 [1.94−3.24], <.001	2.58 [1.99−3.56], <.001			
High-risk alcohol use	.88 [.79−.97], .01	.65 [.26−1.61], .36	2.19 [1.42−3.38], <.001	1.89 [1.24−2.86], .003			
Illicit substance use	1.70 [1.60−1.80], <.001	1.13 [.66−1.95], .67	2.75 [2.04−3.72], <.001	2.65 [1.94−3.60], <.001			

Table 1 is continued on the next page.

Table 1 continued.

	Borschmann, Becker, et al. (2017)		Mars, Heron, Crane, Hawton, Lewis, et al. (2014)		Steinhoff et al. (2021)	Turner et al. (2021)	Wichstrøm (2009)
OR [95% CI], *p*	Unadjusted	Adjusted[a]	Unadjusted	Adjusted[b]	Unadjusted	Adjusted[c]	Unadjusted
SE outcomes							
Educational attainment			.79 [.58−1.06]. .06	1.15 [.81−1.63], .44		≈1.00, .93	
Financial strain/hardship	1.88 [1.78−1.98], <.001	1.25 [.80−1.96], .33				1.59, .06	
Unemployed/not employed full-time	1.34 [1.25−1.43], <.001	1.00 [.59−1.69], 1.00	1.12 [.68−1.85], .32	1.41 [.86−2.33], .18		.85, .69	

Note. Only statistically significant or overlapping variables relevant to the overarching constructs are shown. The statistics were computed from the available data (c.f., Altman & Bland, 2011; Lakens, 2013). NSSI = Non-Suicidal Self-Injury; SE = Socio-Economical.

[a] adjusted for gender, parental socio-economical status, and baseline internalizing and externalizing symptoms.

[b] adjusted for gender, parental socio-economical status, and baseline depressive symptoms.

[c] adjusted for gender, age, parental socio-economical status, school grades, and baseline internalizing and externalizing symptoms.

Chapter 4: Why and how do individuals cease to self-injure?

The previous chapter identified that around 20% of community adolescents have injured themselves (Muehlenkamp, Claes, et al., 2012; Swannell et al., 2014) and that about 35% of these have done so repetitively (Xiao et al., 2022). Most of these adolescents – though not necessarily all (c.f., Stanford, Jones, & Hudson, 2017) – report more pronounced difficulties related to psychosocial functioning than do adolescents who do not self-injure, and NSSI could be an effective and available method of managing and enduring through such difficulties (Hasking et al., 2017; Nock, 2009). Since self-injuring in adolescence is considered a risk factor for poorer mental health and well-being in adulthood (Mars, Heron, Crane, Hawton, Kidger, et al., 2014; Turner et al., 2021), ceasing to self-injure between adolescence and young adulthood might simply reflect the absence of the behaviour, rather than the absence of contextual or psychological distress or the presence of well-being. In other words, coping differently does not imply that life, for these individuals, has become something more than to be endured. This chapter reviews how NSSI cessation is related to mental health and well-being and describes the processes involved in ceasing NSSI and the conditions for concurrent/subsequent psychological growth.

Definition and operationalization of self-injury cessation

The most common definition of NSSI cessation is the reduction or absence of engagement in self-injurious behaviours over a defined period, such as not having self-injured in the past six months (Grunberg & Lewis, 2015) or engaging in such behaviours on fewer than five days in the past year (APA, 2013). Cross-sectional studies often operationalize "past NSSI" by asking participants to recall if they have self-injured using any method (Horgan & Martin, 2016; Rotolone & Martin, 2012; Whitlock et al., 2015) or using several methods (Anderson & Crowther, 2012) in the period before the time frame used to define "current NSSI". On the other hand, longitudinal studies generally define NSSI cessation as a reduction to zero engagement, while continuation is operationalized as any engagement (≥1 instances) reported across ≥2 observations (Andrews, Martin, et al., 2013;

Groschwitz et al., 2015; Hamza & Willoughby, 2014; Steinhoff et al., 2021; Tatnell et al., 2014; Turner et al., 2021). Asking individuals whether they consider themselves as having ceased NSSI or not is also an important complement to behavioural cessation within a given time. This operationalization better accounts for variance in emotion regulation and self-efficacy (Claréus et al., 2023), and how reduced but non-zero engagement may still signify as ceasing NSSI and recovery among those with lived experience (Kool et al., 2009). It also acknowledges that one can be ambivalent about having ceased to self-injure, and that such ambivalence can persist long after behavioural cessation (Kelada, Hasking, Melvin, et al., 2018). Accounting for whether an individual consider themselves to have stopped self-injury is axiomatic in qualitative work, but it has not to my knowledge been implemented in any quantitative study (including the papers in this thesis) beyond Claréus et al. (2023). Therefore, I also quantify NSSI cessation as when assessment (e.g., change between different time points, retrospective self-report) indicates full behavioural disengagement (i.e., 0 instances) or reduction in engagement to below a clinically relevant level (i.e., partial cessation such that the person has injured but fewer than 5 times; c.f., Brunner et al., 2014).

Prevalence and outcomes of self-injury cessation

On the population level, the estimated prevalence of NSSI is suggested to decrease from adolescence (17.2%) to young adulthood (13.4%) and adulthood (5.5%; Swannell et al., 2014). Indeed, two longitudinal studies that followed individuals from adolescence to young adulthood and accounted for individual patterns of (dis)engagement indicated that most people cease self-injuring during this period. Moran et al. (2012) found that 89.7% of those who reported NSSI at any measurement point in adolescence (15.9–17.4 years old) did not report NSSI at any point in young adulthood (20.7–29.1 years old), and Turner et al. (2021) found that 75% of their sample reported ceasing to self-injure during the study period (around 15–25 years old). There are several explanations as to why more people cease rather than continue to self-injure within this period. For instance, it may be related to emotion regulatory processes. As reported by Zimmermann and Iwanski (2014), older individuals often report having more emotion regulatory strategies available to them than do adolescents. The reasons thereof might include that structural and functional neurodevelopment contribute to higher emotional stability (Ahmed et al., 2015), better cognitive control (Luna et al., 2010), and expanded linguistic capacity (Habermas & Bluck, 2000), suggesting that accessibility to alternative practices of relating to and expressing distress might contribute to NSSI cessation. Additionally, the view of NSSI as more common among adolescents may further stigmatize adults who self-injure (Boyce, 2021), suggesting that individuals might become more disinclined to self-injure as they get older.

However, such maturation processes and their relation to cessation of NSSI does not mean that these individuals are doing better in terms of mental health and well-being. Comparisons between individuals who ceased NSSI and those without any lived experience correspond with findings that relate NSSI (not accounting for individual patterns) to negative mental health outcomes in young adulthood (e.g., Mars, Heron, Crane, Hawton, Lewis, et al., 2014). Specifically, cross-sectional and shorter longitudinal studies (≤3 years) on community adolescents and college/university students indicate that individuals who ceased NSSI before or during the study tended to experience more negative emotions (e.g., shame, sadness, blame), less joviality (Brown et al., 2007; Horgan & Martin, 2016; Taylor et al., 2019), higher levels of emotion dysregulation and avoidant coping (Anderson & Crowther, 2012; Horgan & Martin, 2016), higher levels of depression and anxiety (Anderson & Crowther, 2012; Horgan & Martin, 2016), and more social problems (Horgan & Martin, 2016; Tatnell et al., 2014), than do those without any NSSI experience. Turner et al. (2021) also found that community individuals who ceased NSSI before the last assessment at around 25 years old scored lower in various aspects of well-being when compared to those who did not report self-injury at any point during the study. Their study also reported an increase in alcohol, cannabis, and tobacco use that was concurrent with NSSI cessation. Increased substance consumption as well as engagement in different self-harming behaviours (e.g., restricted eating) has been implied in other studies as well (Brown et al., 2007; Gelinas & Wright, 2013; Holliday et al., 2018; Rissanen et al., 2009). Taken together, these findings highlight that NSSI cessation is not a sufficient indicator of the absence of distress or other potentially self-destructive practices.

Although NSSI cessation is not emblematic of doing well, it is empirically suggested as indicative of *doing better*. In comparing adolescents and young adults who report ceasing to self-injure before or during a study with those who continued or had current experiences, researchers have observed significant improvements in various domains related to psychosocial functioning. These include that cessation has been associated with less negative emotionality (Brown et al., 2007), lower levels of depression and anxiety (Duggan et al., 2015; Groschwitz et al., 2015; Hamza & Willoughby, 2014; Horgan & Martin, 2016), fewer suicidal ideations (Hamza & Willoughby, 2014; Horgan & Martin, 2016; Koenig et al., 2017), better emotion regulation, coping skills, and higher self-efficacy (Anderson & Crowther, 2012; Duggan et al., 2015; Gray et al., 2022; Horgan & Martin, 2016; Kelada, Hasking, & Melvin, 2018; Kim & Hur, 2023; Turner et al., 2021; Whitlock et al., 2015), higher life satisfaction (Halpin & Duffy, 2020; Rotolone & Martin, 2012; Stanford, Jones, & Loxton, 2017; Whitlock et al., 2015), higher resilience (Kim & Hur, 2023; Rotolone & Martin, 2012), fewer social problems, and higher social support (Hamza & Willoughby, 2014; Tatnell et al., 2014). These positive changes are likely to occur incrementally – for the 100 persons who ceased to self-injure during Turner et al. (2021), each year of sustained cessation was associated with

reduced levels of depression, anxiety, externalizing behaviours, and alcohol and tobacco use.

To summarize, ceasing NSSI has been shown to be associated with improved emotion regulation and coping, less mental health problems, and higher levels of well-being relative to continuing to self-injure. Nevertheless, those who have ceased to self-injure may still be doing worse than those without any lived experience of NSSI, even if their reported mental health problems are not as pronounced as for those who continue (c.f., Mummé et al., 2017).

Predicting self-injury cessation

Statistical modelling may be useful for distinguishing individuals who continue NSSI from those who cease it based on factors related to NSSI engagement. In this case, cessation of NSSI could be attributed to the fact that some individuals are less likely to remain in distress and within the reciprocal cycle of engagement, meaning that self-injury or the current context may not be as detrimental to their mental health or as prohibitive of improvement. Within shorter time frames (1–4 years), NSSI cessation in adolescent/young adult samples (compared to NSSI continuation) can be predicted from lower frequency of engagement in NSSI (Andrews, Martin, et al., 2013; Hamza & Willoughby, 2014; Kiekens et al., 2017), fewer methods of injury (Kiekens et al., 2017), lower psychological distress/depressive symptoms (Kiekens et al., 2017; Wang et al., 2017), higher capability for emotion regulation and cognitive reappraisal (Andrews, Martin, et al., 2013; Kiekens et al., 2017), higher self-esteem (Tatnell et al., 2014; Tilton-Weaver et al., 2019), lower perceived peer victimization (Tilton-Weaver et al., 2019), and higher levels of family support (Tatnell et al., 2014). However, to my knowledge, only two studies have examined the predictive factors in adolescence of NSSI cessation after more than four years – one conducted in Germany with adolescent outpatients (Groschwitz et al., 2015) and the other with a Swiss cohort (Steinhoff et al., 2021). Groschwitz et al. (2015) could not predict cessation (n = 28) or continuation of NSSI (n = 24) from the presence of any Axis 1 diagnosis (e.g., major depression, anxiety disorder, posttraumatic stress disorder) or NSSI frequency among adolescent outpatients about 5 years after discharge. On the other hand, Steinhoff et al. (2021) found that individuals who reported recurrent NSSI across different measurement points (i.e., 13, 15, 17, and 20 years old; n = 108) had higher levels of internalizing problems in young adolescence (13 years old; *OR* [95% CI] = 1.55 [1.17−2.06]) compared to those who only reported NSSI once (n = 170).

The process of self-injury cessation

The literature reviewed above indicates that NSSI cessation, as compared to continued engagement, is associated with improved mental health and well-being as well as a better psychosocial outlook. However, predicting NSSI cessation in community samples over longer periods is difficult. Given that community adolescents who currently self-injure often experience considerable contextual and psychological distress, understanding how individuals cease NSSI *and* start doing better while growing up in such difficult conditions is important for supporting improvement. Some individuals with lived experience of NSSI draw on discourses of recovery to describe this process (e.g., Lewis et al., 2019), whereas others do not (e.g., Long et al., 2015; Shaw, 2006). Recovery should within the context of NSSI be interpreted as an intentional and gradual process of becoming well, either by the absence of mental health problems and behavioural dysfunction or within the bounds thereof (Leamy et al., 2011). Both the trans-theoretical and person-centred model (reviewed in further detail below) draw on such discourses of recovery. I subsequently discuss NSSI cessation and psychological growth that is not intrinsically linked to such a recovery framework. Neither of these models is more universally applicable than the other; rather, they may be more or less relevant and useful in describing individual experiences based on the intentionality attributed to NSSI and the NSSI cessation process (c.f., Johnson & Onwuegbuzie, 2004). In accordance with the pragmatic approach, these will be discussed in relation to how they complement each other in understanding NSSI cessation in community populations.

The trans-theoretical model of self-injury recovery

The trans-theoretical model (TTM) is originally a psychotherapeutic model intended to explain cessation of a large variety of behaviours, such as problematic substance use, disordered eating, and violence towards others (Norcross et al., 2011). The TTM can also be applied beyond the psychotherapeutic context, such that its stages of behavioural change can be relevantly applied to community individuals who are self-injuring and who are not necessarily in psychotherapy (Grunberg & Lewis, 2015; Kruzan & Whitlock, 2019). According to Grunberg and Lewis (2015), an individual who recovers from NSSI goes through stages of precontemplation (e.g., not thinking about ceasing NSSI within the coming 6 months), contemplation (e.g., thinking about ceasing NSSI within the coming 6 months), preparation (e.g., intending to cease engagement in NSSI in the coming month), action (e.g., active behaviour modification in relevant contexts), and maintenance (e.g., taking action to prevent relapse and maintaining cessation for 6 months). Within the TTM, failure to reach these temporal milestones can be construed as setbacks to ceasing NSSI, as progression is generally presumed because cognitions are suggested to change at

each step (Lewis & Hasking, 2021a, 2023). Kruzan and Whitlock (2019) suggest that these cognitive changes occur through interactions with various relational and behavioural aspects of NSSI cessation; other qualitative studies with community individuals (i.e., who sometimes but not always have sought professional support for ceasing NSSI) identify similar dimensions as integral for ceasing NSSI. Cognitive changes include formulating a desire or wish to stop self-injuring (Buser et al., 2014; Long et al., 2015; Ryan-Vig et al., 2019) and reappraising situations that have preceded NSSI in the past (Gelinas & Wright, 2013). The behavioural aspects of NSSI cessation include the identification and implementation of strategies to control or distract from urges to self-injure (Holliday et al., 2018; Wadman et al., 2018) and enforcing alternative methods for managing different emotional experiences (Shaw, 2006; Sinclair & Green, 2005). Finally, the relational aspects include getting social support from one's peers and relatives (Holliday et al., 2018) or finding professional help (Gelinas & Wright, 2013; Tofthagen et al., 2017).

The main strength of the TTM is its detailed and dynamic outline of the intraindividual change processes related to ceasing NSSI. As such, it is well aligned with the construction of recovery in the mental health research field more broadly – as an active and/or individual process. This construction was relevant in 79% of studies identified in a review by Leamy et al. (2011). As this kind of recovery narrative is situated within the person (Llewellyn-Beardsley et al., 2019), it predominantly features aspects of intention and efficacy, where external factors such as difficult life experiences and events are featured as barriers to be overcome (Kruzan & Whitlock, 2019). However, the TTM's focus on individual and internal processes has also been critiqued, especially when applied to young people. As argued by Ward (2014), it puts pressure on the individual to take responsibility for the deficits of their own mental health and well-being, even when the causes of ill-being are not of one's own volition. For instance, societal structures might bind one to detrimental contexts (e.g., family, school) that contribute to distress or distract from attempts to initiate change (Buser et al., 2014; Gelinas & Wright, 2013). Moreover, recovery might not occur in the implied upward spiral of improvement or transformation. Rather, individuals may move back and forth through different stages or recover horizontally, whereby difficult life circumstances and mental health problems are adapted to and incorporated into one's sense of self rather than moved to the past (c.f., Llewellyn-Beardsley et al., 2019). Finally, ambivalence about wanting to stop self-injuring may occur beyond the initial stages of (pre-) contemplation (Gray et al., 2021), and as discussed in the beginning of this chapter, individuals may hesitate to consider themselves to have actually recovered even after consistent behavioural cessation (Kelada, Hasking, Melvin, et al., 2018).

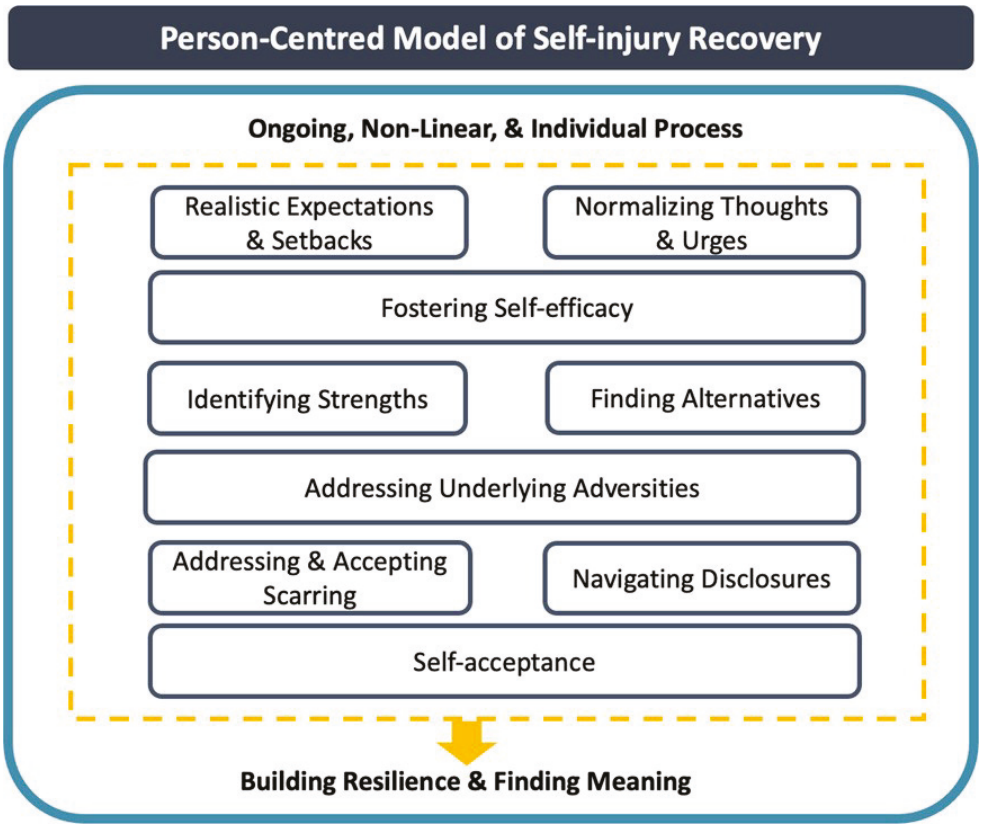

Figure 6. The Person-Centred Model of Self-injury Recovery. From Lewis, S. P. & Hasking, P.A. (2021). Self-injury recovery: A person-centered framework. *Journal of Clinical Psychology*, 77, 884–895. https://doi.org/10.1002/jclp.23094 Copyright © 2020 Wiley Periodicals LLC. Reprinted with permission.

The person-centred model of self-injury recovery

Some of the aforementioned criticisms of the TTM were also brought by Lewis and Hasking (2021a, 2023), who propose a person-centred model of NSSI recovery (Figure 6). Their model incorporates several salient features of the TTM such as fostering self-efficacy and identifying alternatives to NSSI, with or without the help of a healthcare professional or support from someone else. However, while it recognizes behavioural cessation as important, the person-centred model focuses on living well in the absence as well as the presence of distress. Living well includes addressing underlying adversities such as psychological distress (Lewis et al., 2017), and fostering resilience. Resilience, according to Luthar et al. (2000), describes an active process of reframing past adversity and adequately coping with current adversity. Therefore, as an individual becomes more resilient, they might

find it easier to manage experiences using strategies other than NSSI or by approaches other than those that could lead to NSSI (e.g., avoidant/escape coping strategies; Brereton & McGlinchey, 2020). Nevertheless, the urge to self-injure in difficult situations might not fully dissipate (Lewis et al., 2019). Consequently, the person-centred model suggests an approach of normalizing and accepting these urges (Lewis & Hasking, 2021a, 2023), which contrasts with the TTM, whereby recovery is conceptualized as their absence. Other aspects of the person-centred model that complement the TTM include the recognition of individual strengths that are unrelated (e.g., creative endeavours, hobbies) and related (e.g., tendency for compassion for others, enduring through difficult times) to the lived experience, and the fostering of self-acceptance of one's weaknesses and flaws. These tendencies might buffer against NSSI ideations by fostering a sense of meaning and allowing for a more self-compassionate approach when experiencing guilt and shame (Hooley & Franklin, 2018). These are also important aspects of well-being as discussed in chapter 3. In summary, the person-centred model views NSSI recovery as more than the absence of self-injurious behaviour (c.f., Warner & Spandler, 2012), considering several aspects of living well as integral to this process.

Self-injury cessation apart from discourses of recovery

Both the TTM and person-centred model draw on discourses of recovery to describe NSSI cessation and concurrent/subsequent changes in mental health and well-being. However, while the discourse of recovery presupposes intentionality (c.f., Llewellyn-Beardsley et al., 2019), not everyone relates to the cessation of NSSI as a cognizant process. Someone who self-injures may not view NSSI as either *a* or *the* problem for them (Long et al., 2015; Shaw, 2006), implying that NSSI cessation can occur extemporaneously through a resolution or unbinding of a/the problem. Accordingly, NSSI cessation among community individuals has been ascribed to the absence of stressful living conditions (Buser et al., 2014; Shaw, 2006; Sinclair & Green, 2005; Whitlock et al., 2015) as well as positive life events and changes (Rissanen et al., 2013; Shaw, 2006). Within these new life circumstances, NSSI may become reconceptualized as superfluous for managing their different experiences, or as expressed by Shaw (2006): "as women filled their lives with satisfying endeavours, there was no longer room for such [self-injurious] behaviour" (p. 164). It follows that positive or well-being-enhancing aspects of a context may contribute to the cessation process, beyond the removal or reconstrual of distressing aspects (Kruzan & Whitlock, 2019; Lewis & Hasking, 2021a). For instance, achievement, fulfilment, and enjoyment within one's current life circumstances could reinforce growth processes by affirming self-efficacy beliefs and agency, learning new skills, and validating one's strengths (Bauer & McAdams, 2004). This would facilitate the construction of oneself as thriving and living a meaningful life, even if difficulties related to adversity, mental health, and NSSI persist.

Facilitating cessation through interventions

The role of mental health professionals such as psychiatrists, psychologists, social workers, and counsellors is often reiterated as being of outmost importance to ceasing NSSI and improving mental health (e.g., Klonsky et al., 2014). For example, health professionals may help one identify and understand situations that precede NSSI engagement or to select alternative methods of emotion regulation (Kool et al., 2009; Tofthagen et al., 2017). Both the TTM and person-centred model of NSSI recovery recognize receiving formal support from healthcare professionals as important for ceasing NSSI (Kruzan & Whitlock, 2019; Lewis & Hasking, 2021b). However, despite a substantial increase in the number of randomized control trials (RCTs) assessing NSSI engagement as a salient outcome over the past few decades, Fox et al. (2020) noted that no specific treatment appears statistically more effective than others. Indeed, many are just barely more effective than treatment as usual (TAU) or enhanced usual care (EUC). Kothgassner et al. (2020) found that among adolescents, evidence-based therapy was only slightly better than TAU or EUC in reducing engagement in NSSI (Cohen's $d = .13$) and depressive symptoms ($d = .22$) at the group level. The strongest empirical support for reduced engagement in NSSI among adolescents across several RCTs (as reviewed by Kothgassner et al., 2020) was for dialectical behaviour therapy for adolescents (DBT-A). DBT and cognitive behavioural therapy (CBT) are empirically supported among older populations as well (Fox et al., 2020). However, other types of therapy might have individual benefits beyond what becomes quantitatively evident through meta-analyses; Glenn et al. (2019) identified several such promising interventions that are probably or possibly efficacious as well as less intensive and resource-demanding than are DBT and CBT. Nevertheless, these usually include similar components such as individual skills training (e.g., to regulate emotion) or active family therapy/parent training. Since there is no empirical evidence to support that short or infrequent interventions reduce engagement in NSSI (Glenn et al., 2019), healthcare contact should be continuous over time to be effective (Bjärehed & Bjureberg, 2019).

Although engaging counselling and psychotherapeutic interventions are crucial to the process of NSSI cessation and recovery for some people (e.g., Gelinas & Wright, 2013; Tofthagen et al., 2017), others have reported that support from healthcare professionals was not particularly salient in their cessation process (Kelada, Hasking, Melvin, et al., 2018; Rissanen et al., 2013; Shaw, 2006; Whitlock et al., 2015). Some even suggest that their experiences within healthcare settings were actively hurtful or detrimental to their mental health (Long, 2018; Staniland et al., 2021). Furthermore, most never present within healthcare settings at all. In a review, Simone and Hamza (2020) estimated that only about half of individuals who self-injure have disclosed their experiences; among them, most turn to informal sources of support (e.g., friends, family, internet communities) rather than formal sources such as psychiatrists and clinical psychologists (Rowe et al., 2014; Simone &

Hamza, 2020). This, in combination with known structural issues surrounding access to care (for an overview in the Swedish context, see Sveriges Kommuner och Regioner [SKR], 2022), means that many young people do not or cannot receive adequate help within healthcare settings to stop self-injuring and foster well-being. This makes community-based interventions an important and time-efficient complement to individual interventions for supporting young people who self-injure (Hasking et al., 2016; Lewis et al., 2020). Such interventions may take the form of school-based preventative programs that aim to teach individual students protective skills such as coping with distress or problem-solving (Lewis et al., 2020). Some programs aim to prevent mental health problems by focusing on resilience-building or reducing stress, anxiety, and depressive symptoms in the broad sense. RCTs have shown that many such programs are somewhat effective when implemented in schools (Dray et al., 2017; Feiss et al., 2019).

To my knowledge, only two programs have been piloted to test whether they influence NSSI engagement specifically. These are the Signs of Self-Injury (SOSI; Muehlenkamp et al., 2010) and the HappylesPLUS (Baetens et al., 2020). The SOSI program did not show any effect on primary outcomes such as reducing NSSI engagement in the five American schools in which it was implemented (Muehlenkamp et al., 2010). By contrast, Dutch adolescents who participated in the HappylesPLUS program (Baetens et al., 2020) showed a reduction in NSSI and increased emotional awareness at six weeks post-intervention. Importantly, neither program was associated with any iatrogenic effects (i.e., an increase in NSSI) over the study period (Baetens et al., 2020; Muehlenkamp et al., 2010), and both showed promise in facilitating help-seeking and fostering positive disclosure experiences. For example, the SOSI was associated with increased knowledge about NSSI and greater confidence among peers to help people who self-injure (Muehlenkamp et al., 2010), while interviews conducted with people with lived experience suggested that the HappylesPLUS strengthened their intention to seek help (Baetens et al., 2020). Such secondary outcomes are important because school staff and peers may be the first to know or suspect that a student is self-injuring (Hasking et al., 2016), and negative reactions to disclosure and NSSI stigma in this context can have long-lasting impacts on willingness to seek help even for those who desire support (De Riggi et al., 2017; Lewis et al., 2020). Prevention at the community level is also made possible by educating school personnel (e.g., teachers, nurses) about NSSI and how to appropriately respond when it is suspected or known that a student is self-injuring (Lloyd-Richardson et al., 2020a, 2020b). Such knowledge mobilization efforts appear promising: Groschwitz et al. (2017) found that their 2-day workshop had a large effect on German school staff's knowledge about and confidence in addressing NSSI, and this effect was still present after six months.

Chapter 5: Addressing limitations of the field

In the first chapter, I posed two research questions:

1. What does the mental health and well-being of young adults who have ceased to self-injure since adolescence look like?
2. What psychosocial conditions facilitate the cessation of self-injury and psychological growth between adolescence to young adulthood?

The theories and empirical studies reviewed in chapter 3–4 offer some insights into these questions that relate to NSSI cessation during adolescence to young adulthood. However, current understandings and practices related to NSSI cessation are also subject to some limitations. Papers I−IV aim to address these limitations by utilizing both quantitative and qualitative data from the longitudinal *Självkänsla Och Livssituation* project on a Swedish cohort spanning from adolescence to young adulthood.

The need to strengthen understandings of mental health and self-injury cessation

Longitudinal research indicates that reporting NSSI in adolescence is a risk factor for more pronounced mental health problems (Mars, Heron, Crane, Hawton, Lewis, et al., 2014; Steinhoff et al., 2021), low well-being (Turner et al., 2021), and NSSI (Mars, Heron, Crane, Hawton, Lewis, et al., 2014; Wichstrøm, 2009) in young adulthood. Since all these longitudinal studies used a single-item dichotomous measure of NSSI, they could not account for differences related to frequency of engagement. This is relevant because reporting recurrent and repetitive NSSI in adolescence indicates poorer psychosocial functioning at that time relative to occasional or infrequent engagement (e.g., Brunner et al., 2014). Therefore, as also suggested by Hawton et al. (2012), repetitive engagement in NSSI in adolescence might be more strongly indicative of mental health problems in young adulthood as well. Furthermore, Turner et al. (2021) assessed relatively narrow aspects of well-being (i.e., environmental mastery, self-acceptance), whereas utilizing broader

constructs such as flourishing and life satisfaction might provide a more comprehensive view (Hone et al., 2014; Willen et al., 2022). Similarly, no longitudinal cohort study on adolescents spanning beyond 5 years has assessed emotion regulation as an outcome, even though difficulty in emotion regulation is suggested to be one of the most important factors in explaining why individuals start, continue, and might find it difficult to cease self-injuring (e.g., Gray et al., 2021; Hasking et al., 2017; Nock, 2009). These limitations will be addressed in Paper I, which investigates how no, infrequent, and repetitive engagement in NSSI in adolescence prospectively relates to NSSI engagement, emotion regulation, and different aspects of mental health and well-being about 10 years later.

While Paper I explores whether NSSI engagement in adolescence is a risk factor for poorer mental health and well-being and NSSI engagement in young adulthood, it does not consider individual patterns of (dis)engagement, which is an important complement. In chapter 4, I suggested that ceasing NSSI is associated with more favourable outcomes within domains related to mental health and well-being as compared to continuing to self-injure, although people who have ceased to self-injure still report more psychosocial problems relative to those with no experience of NSSI. However, the majority of the reviewed studies relied on a cross-sectional design that did not situate past NSSI in adolescence (Anderson & Crowther, 2012; Brown et al., 2007; Gray et al., 2022; Halpin & Duffy, 2020; Horgan & Martin, 2016; Kelada, Hasking, Melvin, et al., 2018; Kim & Hur, 2023; Rotolone & Martin, 2012; Taylor et al., 2019; Whitlock et al., 2015). Moreover, with one exception (Turner et al., 2021), longitudinal studies starting in adolescence did not extend into young adulthood (Andrews, Martin, et al., 2013; Duggan et al., 2015; Koenig et al., 2017; Tatnell et al., 2014). Similarly, the longitudinal studies that utilized young adulthood samples did not have any measurement points in adolescence or situate past NSSI in adolescence specifically (Hamza & Willoughby, 2014; Horgan & Martin, 2016; Kiekens et al., 2017). Furthermore, the studies that included young adults recruited them from colleges and universities (Anderson & Crowther, 2012; Brown et al., 2007; Gray et al., 2022; Hamza & Willoughby, 2014; Horgan & Martin, 2016; Kiekens et al., 2017; Whitlock et al., 2015) or through social media and snowball sampling (Halpin & Duffy, 2020; Kim & Hur, 2023; Rotolone & Martin, 2012; Taylor et al., 2019), neither of which can ensure a young adult sample representative of the general population (Henrich et al., 2010). These limitations are addressed in Paper II, which focuses on the individual developmental patterns of repetitive NSSI from adolescence to young adulthood. It will consider how common different developmental patterns are and explore how different developmental patterns of repetitive NSSI are associated with community young adults' psychological health and well-being.

The need to address the conditions that facilitate cessation and psychological growth

Paper II also examines the potential risk factors in adolescence that predict the developmental patterns of repetitive NSSI from adolescence to young adulthood. More specifically, the purpose was to predict either the cessation or continuation of repetitive NSSI in young adulthood, which has only been done in two previous adolescent longitudinal studies spanning ≥5 years (Groschwitz et al., 2015; Steinhoff et al., 2021). These two previous studies had inconsistent results, with only Steinhoff et al. (2021) finding significant prospective relationships. Therefore, it would be beneficial to study the process of NSSI cessation and related factors using a more contextualized approach – exploring the role that life events and experiences that occur during this transitional phase of life have in promoting psychological growth. This is particularly important because most adolescents who engage in NSSI stop before young adulthood (Moran et al., 2012; Turner et al., 2021), but cessation alone does not guarantee well-being (Lewis & Hasking, 2021a). Therefore, the purpose of Paper III is to investigate how young adults narrate the life conditions and events before, during, and after NSSI cessation as well as the circumstances that enabled psychological growth.

Moreover, models of NSSI suggest that adverse life experiences and events are important factors in starting and continuing to self-injure (Nock, 2009), which has also been corroborated in several quantitative studies (c.f., Liu et al., 2016). On the other hand, changing life circumstances – such as the absence of adversity or having positive experiences – may facilitate NSSI cessation according to qualitative research (Buser et al., 2014; Rissanen et al., 2013; Shaw, 2006; Sinclair & Green, 2005; Whitlock et al., 2015). Whether those who cease or continue to self-injure experience different life events is yet unknown, possibly because models of NSSI cessation focus on intra- or interpersonal factors rather than contextual ones to explain how individuals cease to self-injure (Kruzan & Whitlock, 2019; Lewis & Hasking, 2021a). Therefore, the final paper of this thesis, Paper IV, investigates whether young adults who reported the continuation or cessation of repetitive NSSI since adolescence can be differentiated based on their retrospective reports of positive and negative life events in the past 10 years.

Chapter 6: Methods

The four papers in this thesis utilize data from a project called *Självkänsla Och Livssituation,* which was initiated at Lund University in 2005. The initial aim of this project was to study the associations between NSSI and different psychosocial variables in a Swedish cohort of junior high school students over a 1-year period. These students were invited to complete questionnaires in 2007 (T1) and 2008 (T2). A follow-up survey was conducted about 10 years later, in 2017 (T3).

The self-report questionnaire data collected at T1, T2, and T3 constitute the data analysed in Papers I, II, and IV. Extended analyses were also conducted with this data to include in the thesis. Paper III utilizes transcripts from semi-structured interviews conducted in 2018 with eleven of those individuals who responded to the survey at T3. Below, I describe the sample characteristics, procedure, and materials for the quantitative and qualitative parts of this thesis separately, starting with the quantitative data collection process as those participants constituted the pool of potential interviewees for the third paper. Ethical considerations are discussed in the end.

Quantitative methods

Participants

T1 and T2

The original sample comprised students in grades 7 and 8 who attended any of the four public schools or one private school located in a southern Swedish municipality in 2007, and students in grades 8 and 9 within the same schools the following year. In Sweden, attending school until grade 9 is compulsory (c.f., Skolverket, 2022). Specialized schools targeting students with learning disabilities were not included in data collection. On January 1, 2007, the municipality in which the schools were located had about 40,000 inhabitants; comparisons by Lundh et al. (2008) indicated that the municipal demographics at that time were comparable to national data from Statistics Sweden (sv. Statistiska Centralbyrån [SCB]). Exceptions included that the municipality was slightly more rural with 84.4% of the population living in agrarian

areas as compared to 80.2% in Sweden as a whole, and that the adult population had a slightly lower mean income level (210,000 SEK/year vs. 227,000 SEK/year) and lower educational level (25% vs. 35% having a university education).

As shown in Figure 7, 1,064 students were found in the class lists in 2007 and thus were eligible for participation at T1. One year later, the available participant pool had increased to 1,098 students, attributed to a larger number of students moving to than from the municipality and/or more students switching to rather than leaving one of the included schools between T1 and T2. There was a slight decrease in response rate from T1 ($N = 992$, 93.23%) to T2 ($N = 987$, 89.89%). At T1, the mean age of the sample was 13.73 years ($SD = 0.68$; 50.1 % girls), increasing to 14.78 years ($SD = 0.69$; 51.1% girls) at T2. The proportion of participants of foreign descent (defined as either being born abroad or born in Sweden with both parents born abroad; c.f., SCB, 2002) at T1 and/or T2 was 14.3%. This proportion was comparable to the 15.5% of the 2007 municipal population of 13- to 15-year-olds, but lower than the 2007 national average of 23.3% as recoded in the SCB database.

T3

Of the 1,109 individuals eligible for participation at T1 and/or T2, 557 responded to the survey at T3. Self-reported demographic data is presented in detail in Paper I, while demographic data describing the subsamples of each paper is available in each respective article. Overall, the mean age of all respondents at T3 was 25.33 years ($SD = 0.68$) and 59.2% identified as women and 41.3% as men. In those instances ($n = 2$) where the participant indicated a different gender identity at T3 compared to T1/T2 (e.g., girl at T1/T2, man at T3), their gender at T1/T2 was adjusted to reflect their current gender identity in papers that used gender as a covariate. This was preferred to creating a distinct category which could invalidate participants' current gender identity and falsely assume that they currently identified as trans or are more similar to each other than to people with congruent answers (Lindqvist et al., 2020).

Comparisons with available national statistics on 25-year-olds from SCB dating December 31, 2017, suggested that fewer individuals were of foreign descent in the current sample (12.75%) than the national average (26.12%; $\chi^2(1) = 51.62$, $p < .001$). There was no available national data on relational status, but most (62.3%) reported that they were either married, cohabiting, or in a relationship. Fewer participants than the national average had children (10.41% vs. 23.43%; $\chi^2(1) = 52.61$, $p < .001$), but their educational attainment was generally higher ($\chi^2(3) = 58.08$, $p < .001$), with 3.23% (vs. 10.17% national average) having completed only lower secondary education and 30.88% (vs. 21.13% national average) having completed post-secondary education longer than 3 years. Current employment status could not be compared to national statistics, but most participants were either full- or part-time employees (60.4%) or currently studying (26.2%).

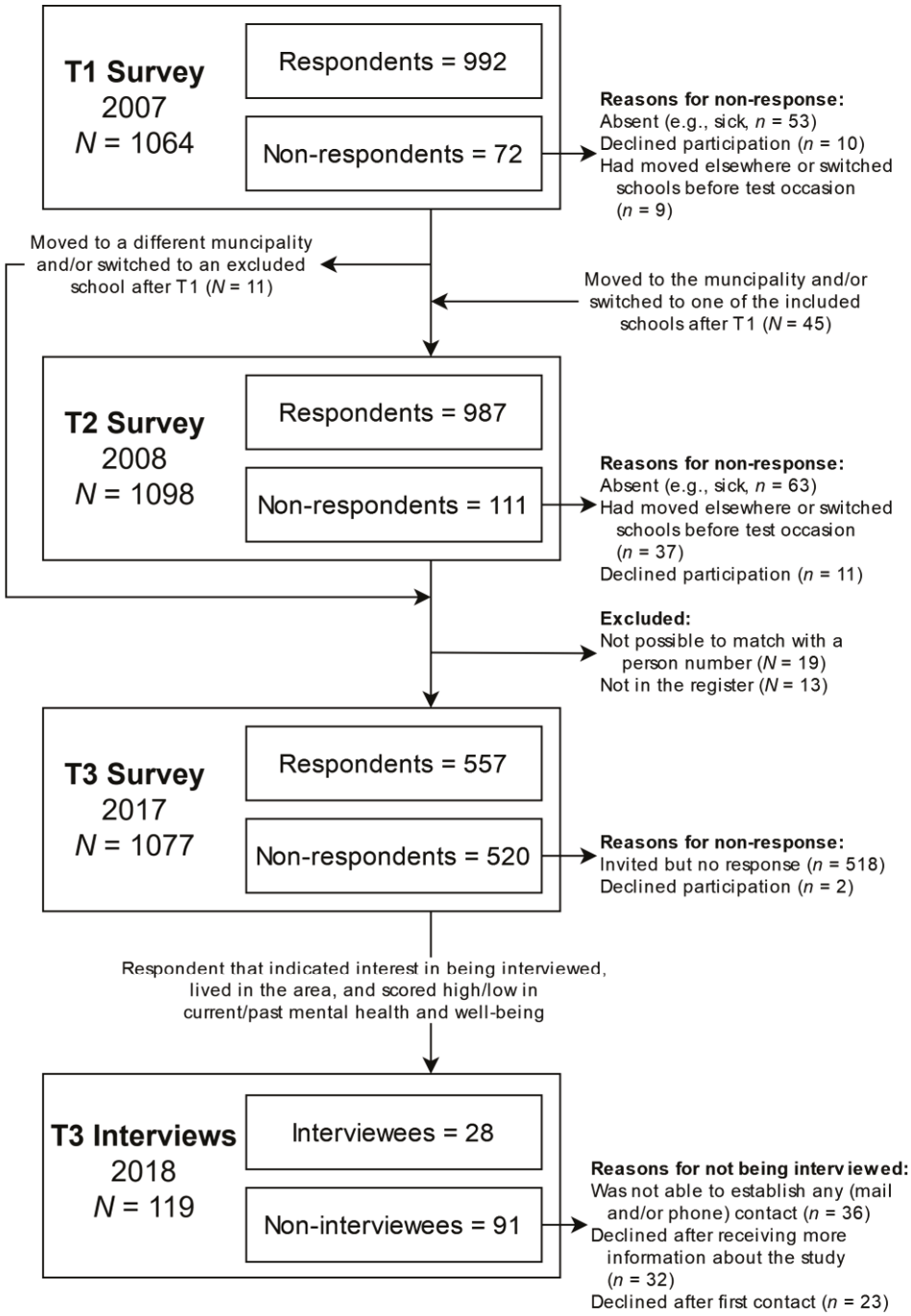

Figure 7. Flow of participants across time points.

Procedure

T1 and T2

Data collection at T1 and T2 was conducted in collaboration with the municipal body. The principal of each of the five schools was contacted and agreed to their school's participation in the study. Data collection at T1 took place between January and April 2007, and data collection at T2 took place between January and May 2008. Data collection was planned so that at least 12 months passed between sessions. A second session was arranged for students who were absent from the main data collection session at each time point, if the student or their parents/guardians had not withdrawn assent/consent.

Before data collection, written information about the study, including its aims and the procedure, was sent to the parents/guardians of each student as well as handed out to the students in school. The research assistants who collected the data during a separate lecture hour also presented the same information orally to students. Parents/guardians passively consented to their child's participation, such that they were required to contact the researchers or the school staff to withdraw their child from the study. Students could refrain from participation by either speaking to the school staff/researchers, terminating the survey, or handing in a blank survey. To ensure confidentiality, students were dispersed in the classroom during data collection, and handed in their questionnaire in an unmarked envelope. Numeric codes were used to identify participants and match their T1 and T2 data, and students were also reminded to not write their name or any other identifying information on the questionnaire.

T3

To conduct the follow-up after 10 years later, the class lists from T1 and T2 were used to match participants' identification number with their Swedish person number from the school registers. Nineteen cases could not be matched, as one school closed during the interval between T2 and T3 and their records were destroyed; moreover, information about these participants was missing from records provided by the municipality. The person numbers for the remaining 1,090 participants were sent to the Swedish state's personal address register. No valid information was returned for 13 individuals. The reasons thereof were unknown but might include that the individual was deceased or had moved abroad permanently, or that their identity was protected and their address could not be shared according to the Swedish principle of public access (c.f., Ministry of Justice, 2020).

The first invitation letter was sent out by mail in September 2017, describing the purpose of the study and inviting participants to fill out a web survey designed using the Lund University survey system. Two reminders were sent out. The first reminder also had a paper questionnaire enclosed together with an unmarked envelope with pre-paid postage. This questionnaire, as well as the login credentials, were only

marked with the participants' identification numbers to ensure confidentiality. Data collection continued until December 1. In total, 458 individuals responded to the questionnaire online and 99 by paper-and-pencil. After completing the questionnaire by either method, participants received either two cinema tickets or four lottery tickets as compensation.

Materials

An overview of the measurements used in the thesis are presented in Table 2. Below, I describe and discuss two measurements in further detail. The first measurement is the revised Deliberate Self-Harm Inventory, which was used to measure NSSI at all time points. Accordingly, it is central to the operationalization of NSSI and NSSI cessation in the present thesis. The other is the Life Events Questionnaire, which was developed for the purpose of the larger project and had not been published before its implementation in Paper IV. For more information about the other variables, please see the individual papers.

The revised Deliberate Self-Harm Inventory (DSHI-9r)

The original version of the inventory was constructed by Kim Gratz (2001). The present project uses the DSHI-9r, a shortened version of the original scale adapted to Swedish adolescents by Lundh et al. (2007), Bjärehed and Lundh (2008), and Lundh, Wångby-Lundh, & Bjärehed (2011). Lundh et al. (2007) translated the scale into Swedish and combined similar behavioural items (e.g., "burning [skin] with a cigarette" and "burning [skin] with a lighter or match"), whereby Bjärehed and Lundh (2008) excluded items that were endorsed by fewer than 10% of the Swedish high school students in their sample. The 9-item version suggested by Bjärehed and Lundh (2008) had good test-retest reliability over a 4- to 9-week interval in Swedish adolescents (r = .64–.85). Finally, Lundh et al. (2011) combined two items encompassing head-banging and punching oneself and added one item about minor cutting (sv. rispa). Lundh et al. (2011) also showed that all items in the definitive version were correlated with current psychological difficulties (r = .23–.33), suggesting that no irrelevant behaviours were included.

The DSHI-9r used in the current project encompasses the following nine self-injurious behaviours: (1) cutting wrists, arms or other body areas; (2) minor cutting, causing bleeding; (3) burning skin with cigarette, lighter or match; (4) carving words, pictures, etc., into the skin; (5) severe scratching, causing bleeding; (6) biting oneself, so that skin is broken; (7) sticking sharp objects into the skin; (8) punching/banging one's head; and (9) preventing wounds from healing. Respondents used a 7-point scale (0 = *never*, 1 = *once*, …, 6 = *more than five times*) to indicate how often they had engaged in each behaviour within the past 6 months at T1 and T2 or the past 12 months at T3. The time frame was expanded at T3 to

Table 2.
Overview of the Measurements Included in the Different Papers and Extended Analyses

Measurement (abbreviation)	Authors	Utilized subscales (*n* items)	Response scale	Measured at	Included in
Adolescents' Emotion Regulation Strategies Questionnaire (AERSQ)	Zhou et al. (2020)	Rumination/Negative thinking (7), Positive reorientation (4), Communication (2), Distraction (4), Cultural activities (3)	1 = *never*, …, 5 = *very often*	T1, T2	EA
Brief Resilience Questionnaire (BRS)	Smith et al. (2008)	None (6)	1 = *strongly disagree*, …, 5 = *strongly agree*	T3	Paper II, Paper IV
Revised Deliberate Self-Harm Inventory (DSHI-9r)	Gratz (2001); modified by Bjärehed and Lundh (2008); Lundh et al. (2007); Lundh, Wångby-Lundh, & Bjärehed (2011)	None (9; i.e., cutting wrists, arms or other body areas; minor cutting, causing bleeding; burning skin with cigarette, lighter or match; carving words, pictures, etc. into skin; severe scratching, causing bleeding; biting oneself, so that skin is broken; sticking sharp objects into skin; punching/banging one's head; preventing wounds from healing)[a]	0 = *never*, 1 = *once*, …, 6 = *more than five times*	T1, T2, T3	Paper I, Paper II, Paper IV, EA
Depression, Anxiety and Stress Scale (DASS)	Lovibond and Lovibond (1995)	Depression (7), Anxiety (7), Stress (7)	0 = *never*, …, 3 = *almost always*	T3	Paper I, Paper II, EA
Depression Index	Lundh, Wångby-Lundh, Paaske, et al. (2011)	None (35)	Not applicable[b]	T1, T2	Paper II, EA
Brief Difficulties in Emotion Regulation Scale (DERS-16)	Gratz and Roemer (2004); modified by Bjureberg et al. (2016)	None (16)	1 = *almost never/0–10 % of the time*, …, 5 = *almost always/91–100% of the time*	T3	Paper I, Paper II, EA
Emotional Tone Index (ETI)	Berscheid et al. (1989); modified by Repinski and Zook (2005)	Negative emotions towards parents (9), Negative emotions towards peers (6)	1 = *never*, …, 4 = *very often*	T1, T2	EA

Table 2 is continued on the next page.

Table 2 continued.

Measurement (abbreviation)	Authors	Utilized subscales (*n* items)	Response scale	Measured at	Included in
Flourishing Scale (FS)	Diener et al. (2010)	None (8)	1 = *strongly disagree*, … , 7 = *strongly agree*	T3	Paper I, Paper II, EA
Life Events Questionnarie (LEQ)	Not applicable (c.f., Paper IV)	Positive experiences (4), Negative experiences (6), Profoundly negative experiences (4)	0 = *no*, 1 = *yes*; either within the last year, 1 to <5 years, or 5 to <10 years	T3	Paper IV
McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD)	Zanarini et al. (2003)	None (9 + 1)[c]	0 = *no*, 1 = *yes*	T3	Paper I
Positive and Negative Interpersonal Behaviors Inventory (PANIBI)	Lundh et al. (2014)	Direct aggressor (5), Direct victimization (5)	1 = *never*, …, 5 = *very often*	T1, T2	EA
Psychiatric diagnosis	Not applicable (c.f., Paper I)	None (1; i.e., “Have you been diagnosed with one or more psychiatric disorders?”)	0 = *no*, 1 = *yes*	T3	Paper I
Satisfaction With Life Scale (SWLS)	Diener et al. (1985)	None (5)	1 = *strongly disagree*, …, 7 = *strongly agree*	T3	Paper I, Paper II, EA
Sickleave longer than 2 months	Not applicable (c.f., Paper I)	None (1; i.e., “Have you been on sick leave longer than 2 months?”)	0 = *no*, 1 = *yes*	T3	Paper I
Sleep problems	Lundh et al. (2013)	None (1; i.e., “Do you sleep well?”)	1 = *always*, …, 5 = *never*	T1, T2	Paper II, EA
Strengths and Difficulties Questionnaire–self-report version (SDQ-s)	Goodman (1997)	None (20)	0 = *not true*, …, 2 = *certainly true*	T1, T2	Paper I, Paper II, EA

Note. EA = Extended Analyses; T1 = 2007; T2 = 2008; T3 = 2017.

[a] At T3, participants were asked to indicate how often they had injured themselves by the listed methods in the past 12 months, as compared to in the past 6 months at T1/T2. Participants at T3 were also asked if they had attempted suicide while injuring themselves using the listed methods.

[b] The Depression Index utilizes *z*-scored items from different measurements, including the ETI, PANIBI, sleep problems, and SDQ-s.

[c] Item 2, which concerns self-injury/suicide attempts was removed, and one was added to their score if participants affirmed to have injured themselves or attempted suicide in the DSHI-9r.

align with the postulated recency criterion of NSSI disorder in the DSM-5 (APA, 2013) and to account for the larger time gap between T2 and T3 relative to that between T1 and T2. While the DSHI-9r cannot account for engagement NSSI by any method beyond ≥6 times, employing open-ended questions (i.e., having no set upper limit for engagement within the past year or within one's lifetime) may lead to unreliable estimates (Daukantaitė et al., 2020). Moreover, between-individual heterogeneity may be more prominent at lower than at higher frequencies of engagement (e.g., Ammerman et al., 2017), meaning that it is more informative for differentiating between those who seldomly self-injure than for those who do so often.

Longitudinal self-injury patterns. Assuming that all DSHI-9r behaviours are relevant denominators of NSSI (Latimer et al., 2013), participants' responses were summed into a total score ranging from 0 to 54. The total score was used to identify longitudinal patterns of NSSI over T1 and T2 (Paper I) and over T1, T2, and T3 (Paper II; Paper IV; Extended analyses). These patterns were based on cutoffs determined as 0 instances (no NSSI), 1–4 instances (infrequent NSSI), and ≥5 instances (repetitive NSSI). These cutoffs were previously applied in international research (Brunner et al., 2014), and this operationalization of repetitive NSSI is considered a clinically relevant threshold (Ammerman et al., 2017).

To identify the longitudinal patterns of NSSI, cutoffs were compared across observations, looking at whether students' reports implied initiation, continuation, or cessation of NSSI (Figure 8). Patterns of particular interest to this thesis were *no (repetitive) NSSI*, *continuation of/prolonged repetitive NSSI*, and *cessation of/stable adolescence-limited repetitive NSSI*. Note that there are slight differences in the terminology and how the patterns were defined between Papers II and IV/Extended analyses. The latter analyses were more stringent than in the former for defining the reference group (i.e., 0 instances of NSSI in all available observations), but more lenient in how many observations of repetitive NSSI in adolescence were necessary for assigning trajectory membership (i.e., requiring repetitive NSSI to be reported only once in adolescence for the continuation/cessation patterns). Paper IV/Extended analyses also split the *cessation of repetitive NSSI*-group into two subgroups based on whether the cessation from repetitive NSSI was full (i.e., ≥5 instances of NSSI at T1/T2, and 0 instances at T3) or partial (i.e., ≥5 instances at T1/T2, 1−4 instances at T3). Assignment into either the full or the partial cessation of NSSI was unrelated to whether repetitive NSSI was observed at both T1 and T2; $\chi^2 = .94$, $p = .330$. Figure 9 suggests that the different operationalizations of NSSI cessation produced comparable groups in terms of T1/T2/T3 measures of mental health, while the power to detect a medium effect increased (40% in Paper II vs. 68% for the unified cessation group and 66% for the full cessation group in Paper IV/Extended analyses)

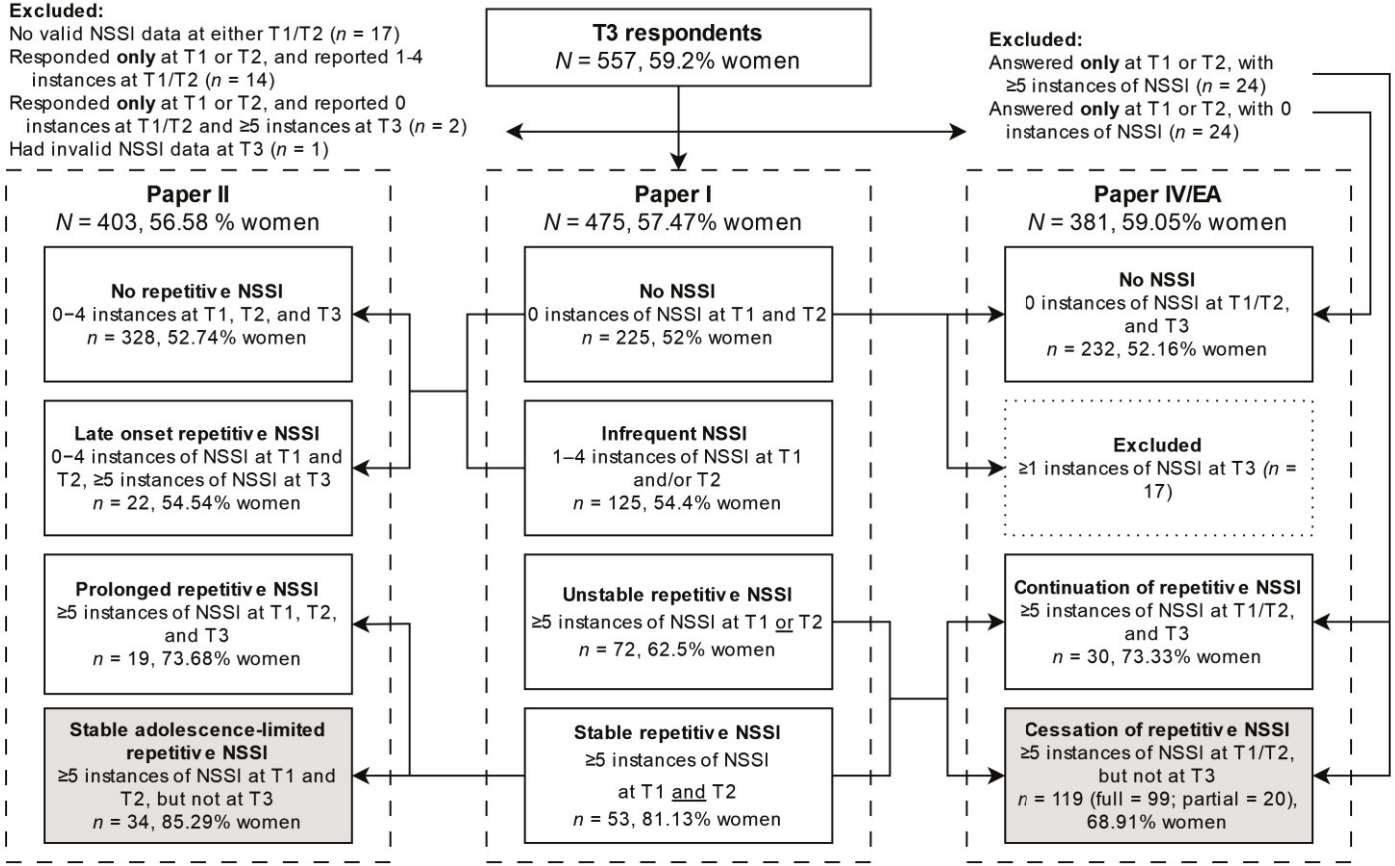

Figure 8. Number of participants allocated to different NSSI patterns in each paper, with the NSSI cessation groups highlighted. Those reporting cessation of repetitive NSSI were divided into two subgroups in Paper IV/EA depending on whether cessation was full (i.e., 0 instances at T3) or partial (i.e., 1−4 instances at T3). EA = Extended Analyses; NSSI = Non-Suicidal Self-Injury.

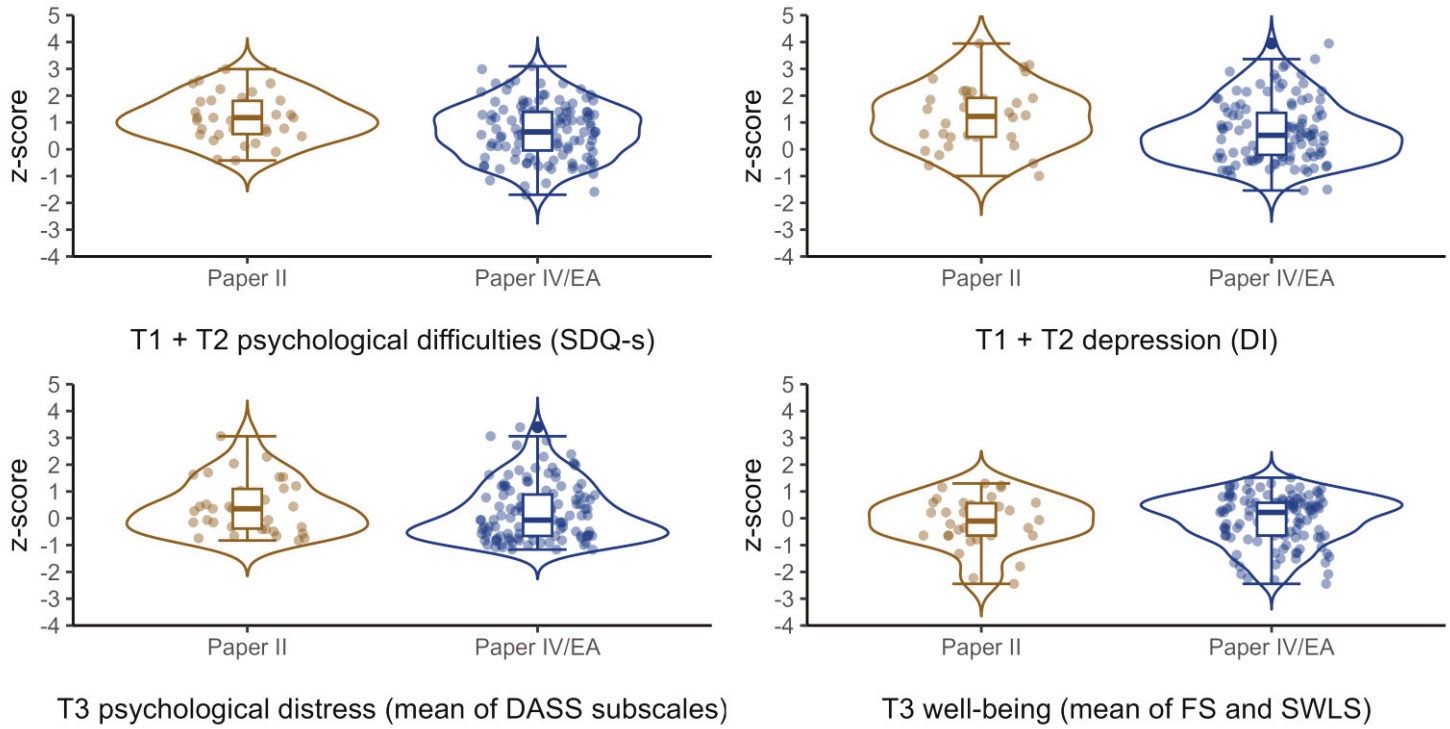

Figure 9. Comparisons between operationalizations of ceasing NSSI used in Paper II and Paper IV/extended analyses. The scores were standardized relative to all available cases. DASS = Depression, Anxiety, and Stress Scale; DI = Depression Index; EA = Extended Analyses; FS = Flourishing Scale; NSSI = Non-Suicidal Self-Injury; SDQ-s = Strengths and Difficulties Questionnaire–self-report version; SWLS = Satisfaction With Life.

Life Events Questionnaire (LEQ)

The LEQ asks participants to indicate (0 = *no*, 1 = *yes*) if they have experienced 14 different life events within the last year, 1 to <5 years ago, or 5 to <10 years ago. These answers are summed to create a score representing how many kinds of life events the respondent experienced within a particular time frame. Based on the cluster analysis described in further detail below (and in Paper IV), these life events were grouped as *positive events* (i.e., reaching a life goal, finding a meaningful hobby, receiving an award, and meeting [a] significant other[s] with a positive impact on their life), *negative events* (i.e., death of a close family member, death of a relative, death of someone significant to them [e.g., a friend], subject of a serious accident, parents' or guardians' divorce, and recovery from physical illness/injury), and *profoundly negative events* (i.e., victim of physical assault, victim of sexual assault or other unwanted sexual experience, severe physical/mental illness, and recovery from/adaptation to mental illness). As the LEQ was developed for the purpose of the present project, its development process is detailed below.

Item selection. While there are several questionnaires focused on assessing the occurrence of negative or stressful experiences (c.f., Monroe, 2008), the LEQ was created to include more events considered relevant and common among those with lived experience of NSSI. Moreover, few questionnaires include events with a positive connotation; thus, these had to be identified with support from current research. In total, the LEQ encompasses 14 different life events. *Death of a close family member*, *death of a relative*, *death of someone important to them*, *subject of a serious accident*, *victim of physical assault*, *victim of sexual assault or other unwanted sexual experience*, and *parents' or guardians' divorce* were included because all have been directly associated with NSSI (e.g., Gratz, 2003; Hawton et al., 2012), or indirectly through aggregate measures of life stress (e.g., Liu et al., 2016). For similar reasons, three items delineating current or recent experiences of somatic or mental health problems were added as well (i.e., *experiencing serious physical/mental illness*, *recovery from physical illness/injury*, and *recovery/adaptation to mental illness*; c.f., Cerutti et al., 2011; Plener et al., 2015). The final four items (i.e., *reaching a significant life goal*, *finding a meaningful hobby*, *receiving an award*, or *meeting (a) significant other(s) with a positive impact on their life*) were inspired by research from Shaw (2006) and Rissanen et al. (2013), which suggested that these events might be important for the cessation of NSSI. The order of presentation and the exact wording of the items (Swedish original and English translation) is available in the supplementary appendix of Paper IV.

Response scale. Similar to earlier work in the field that assessed the presence of an event rather than its recurrence (e.g., Kaess et al., 2020; Keenan et al., 2014; Madge et al., 2011; Voon et al., 2014), participants were asked to indicate whether they had experienced a particular event at least once or not at all (0 = *no*, 1 = *yes*) within the last year, 1 to <5 years ago, or 5 to <10 years ago. The dichotomous answer format

and intervals were chosen to facilitate a rapid response, as participants might struggle to recall events that had occurred more than a year ago (Paykel, 1997) and because some experiences such as recovery could be difficult to situate within a more narrow time frame (Slade & Longden, 2015).

Item grouping. Although it would be possible to group the 14 life events according to whether their connotation was predominantly positive or negative, their grouping was based on empirical data rather than on a priori assumptions. Therefore, *k*-means cluster analysis was used on the Pearson Point-Biserial correlations between having experienced an event at least once (coded as 1) or not at all (coded as 0) within the past 10 years and T3 measures of flourishing, life satisfaction, anxiety, depression, and stress (c.f., Table 2). *k*-Means cluster analysis assigns observations – in this instance, life events – to separate groups based on their proximity in the Euclidean distance input space, such that the sum of the variances within each cluster is minimized (Morissette & Chartier, 2013). Hence, the final cluster solution reflected which events had similar associations with current mental health and well-being. Clusters were not computed separately for each time frame (i.e., within the last year, 1 to <5 years ago, or 5 to <10 years ago) because of low cell counts, which could impact the reliability of the results. The elbow and average silhouette method suggested three clusters as optimal, and assigning different events as positive, negative, and profoundly negative was stable across algorithms (i.e., Hartigan-Wong's, Lloyd's, Forgy's, and MacQueen's; c.f., Bock, 2007) and initial configurations. The clusters are visualized in Paper IV.

Table 3.
Relative Response Rates to the T3 Survey

	Response rate at T3	
Comparison	Of eligible participants	Of the responders
At T1	538/1064 = 50.6%	516/992 = 52.0%
At T2	553/1098 = 50.4%	505/987 = 51.2%
At T1 and/or T2	557/1109 = 50.2%	541/1070 = 50.6%
At T1 and T2	534/1053 = 50.7%	480/909 = 52.8%

Note. T1 = 2007; T2 = 2008; T3 = 2017. This table is identical to Table 1 in Daukantaitė, D., Lundh, L.-G., Wångby-Lundh, M., Claréus, B., Bjärehed, J., & Zhou, Y. (2019). Evaluating respondent attrition in a 10-year follow up of the SOL project "Deliberate self-harm, emotion regulation and interpersonal relations in youth". *Lund Psychological Reports*, 1(19), 1-20.

Data analysis

Missingness between T1/T2 to T3

At T3, the actual response rate varied from 50.2% to 52.8%, depending on whether the number of responders at T3 was compared with eligible or actual participants at T1 and/or T2 (see Table 3). This attrition rate was comparable with some earlier longitudinal research on cohorts, such as 50% attrition over 11 years in Sigurdson

et al. (2018) and 51.7% over 5 years in a British birth-cohort study (e.g., Mars, Heron, Crane, Hawton, Lewis, et al., 2014). Nevertheless, the considerable number of non-responders warranted consideration of whether multiple imputation (MI) should be used to handle missing T3 data across the different quantitative papers. It was decided to not impute any T3 data for the non-responders in the main statistical analyses (reasons for which are described below).

The proportion of non-responders in relation to the unobserved time gap between T1/T2 and T3 suggested that the data loss could be non-random. For example, current incidence of NSSI and mental health problems could explain non-response (Mars et al., 2016). Hence, the data is unlikely to be missing completely at random (MCAR), suggesting that it is either missing at random (MAR) or missing not at random (MNAR). The above examples describe situations where the unobserved data could be MNAR, such that the responders are systematically different from the non-responders. On the other hand, MAR would suggest that the unobserved values are not randomly distributed, but that this could be accounted for by observed data, for instance if adolescent mental health was a relevant predictor of current NSSI.

MAR and MNAR cannot be statistically discerned from each other (Sterne et al., 2009), warranting consideration of the consequences of using MI in either instance. In a simulation study by Kristman et al. (2005), the authors concluded that MI compared to removing incomplete cases produced equally valid results when the data was MAR. However, when data is MNAR, neither removing incomplete cases nor MI produced unbiased estimates (Kristman et al., 2005), and misrepresentation of the distribution with MI under MNAR could be as large or even larger than if incomplete cases are removed (Sterne et al., 2009). Since potential attrition bias could not be precluded in the current project (due to the large interval between T2 and T3), these findings suggest that an MI model should only be utilized if there are sufficient auxiliary variables and MI would improve precision of the predictive models.

To evaluate whether missingness could be predicted, responders and non-responders at T3 were compared on the available measures from T1/T2. Detailed results from these analyses are available in a separate attrition report (Daukantaitė, Lundh, Wångby-Lundh, et al., 2019). With a large sample and multiple comparisons in mind, the size of these differences might provide more meaningful information than *p*-values. For the statistically significant results, the effect sizes ranged from very low to low (Cohen's *d*/Cramer's V = .12–.21). This indicates that variables measured at T1 and T2 could not be used to build a MI model with sufficient auxiliary variables (Sterne et al., 2009). Moreover, when MI with predictive mean matching and bootstrapped logistic regression was applied in Paper I, it did not narrow the confidence intervals of the regression coefficients appreciably, suggesting that imputation did not improve precision.

In conclusion, missingness in the current study could be due to MAR or MNAR, and the lack of auxiliary variables as well as limited statistical benefits of MI in this project supported the decision to listwise remove the non-responders at T3. Moreover, the minor differences found between responders and non-responders in the attrition report suggested that the T3 responders represented the original sample relatively well.

Missingness within T1, T2, or T3

Each of the quantitative papers separately evaluated missingness in the variables delineated in the research questions. Missingness in the DSHI-9r was consistently considered as the absence of a given self-injurious behaviour if the participant had valid responses in six or more items (c.f., Lundh, Wångby-Lundh, & Bjärehed, 2011). Missingness in the other variables was evaluated for MCAR with Little's (1988) MCAR test. Due to the high sensitivity of Little's MCAR test, the total percentage of missing data and the χ^2 to *df* ratio was considered as well (Ullman, 2012). Missingness within the variables included in the different papers was found to be at least MAR; consequently, it was imputed with the expectation-maximization algorithm or MI (Paper IV only).

Statistical methods

The statistical methods used in this thesis are commonplace within psychological literature (e.g., linear/logistic regression, χ^2-tests), except for configural frequency analysis (Paper II), which is described in further detail below. I also elaborate on the purpose and procedure of the Extended analyses conducted for this thesis specifically.

Configural frequency analysis. Configural frequency analysis is a person-oriented analytic method described by von Eye and Mun (2016) and Stemmler and Heine (2017), among others. In Paper II, configural frequency analysis was performed using the corresponding module in the statistical software ROPstat (Vargha et al., 2015) to evaluate whether different patterns of repetitive NSSI over T1, T2, and T3 were observed more or less frequently than expected by chance from the independence model. The independence model was in this instance defined as if there was no association between the different time points, such that whether someone reported repetitive NSSI would be unrelated to any previous or subsequent reports, while also accounting for the prevalence of repetitive NSSI at the sample level. Each configuration of observations was tested against this independence model with a two-tailed *z*-test to check whether they are *types* or *antitypes*. A *type* indicates that more individuals than expected are allocated to a certain pattern, while an *antitype* indicates that fewer individuals than expected are allocated as such. An a priori type could include that someone reports repetitive NSSI at both T1 and T2 because current NSSI is predictive of future engagement within a year (Fox et al., 2015). Looking at the interval between T1/T2 and T3, a potential type could include

that someone ceases to injure themselves repeatedly (c.f., Moran et al., 2012; Swannell et al., 2014; Turner et al., 2021).

Extended analyses. Some data analyses reported in this thesis were not included in the three quantitative papers but were performed later; these are described in further detail below. The purpose of these analyses was two-fold. First, they provide a more comprehensive view of the association between adolescent psychosocial functioning and different NSSI patterns, and second, it is intended to explore the associations between mental health and well-being in young adulthood if the patterns of NSSI engagement were operationalized less stringently than in Paper II (c.f., Figure 8).

To these ends, bi- and multivariate logistic regression predicting the continuation contra (full/partial) the cessation of repetitive NSSI were carried out with T1/T2 variables not included in Paper II (c.f., Table 2). Moreover, the differences between the *no NSSI*, *continuation of repetitive NSSI*, and *full/partial cessation of repetitive NSSI* patterns in overall adolescent psychosocial functioning were explored with Welch's analysis of variance and the Games-Howell post-hoc test, and the effect of any significant between-group differences were estimated with Cohen's *d*. The same tests were used to compare these groups in variables related to mental health and well-being in young adulthood as well.

Qualitative methods

Participants and recruitment

Of the 557 young adults that responded to the questionnaire sent out in T3, 228 indicated that they would be interested in participating in a follow-up interview. The aim of the interviews was to obtain a more holistic and idiographic view of mental health and well-being among young adults, particularly their own view of their life course and what experiences they perceived as having affected them the most during their upbringing. Therefore, the recruitment efforts prioritized those who, compared to the rest of the sample, scored very high or very low on composite indices of mental health in adolescence or young adulthood. This recruitment approach was inspired by phenomenography, such that "each phenomenon, concept, or principle can be understood in a limited number of qualitative different ways" (Marton, 1986, p. 31), and quantitative variation was assumed to represent as many different qualitative understandings as possible. Moreover, individuals who lived farther than two hours (one-way) away from Lund University were not contacted. The goal was

to interview around 30 people. In total, 119 individuals were contacted (see Figure 7), of which 28 agreed to be interviewed.[3]

From those who were interviewed, 11 participants were selected for inclusion in Paper III. These were selected because they reported on the DSHI-9r to have injured themselves five or more times at T1 and/or T2 but not at T3; in other words, participants reported injuring themselves repetitively and to a clinically significant level in adolescence, but not in young adulthood (Ammerman et al., 2017; Brunner et al., 2014). As this definition did not account for the potential relevance of someone who reported fewer instances and/or had self-injured before or after T1/T2, the remaining interviews were screened for narrations about NSSI cessation/recovery or similar. This process revealed no additional cases. The final sample was aged 25–26 years. Five identified as women and six as men. They recounted different experiences in relation to past and current mental health, family configurations, and socioeconomic situations.

Procedure

Participants who indicated interest to participate in a follow-up interview were contacted by email or phone. Those who indicated that they might be interested in participating were sent a information letter describing the purpose of the study, confidentiality, anonymity, and their rights to decline participation or discontinue the interview at any moment. This information was also repeated orally to the interviewees at the beginning of the interview, before they signed a consent form agreeing that they understood this information and that the interview would be recorded.

As the information letter was directed to all individuals in the qualitative portion of this project and not just those whose data was analysed in Paper III, it did not explicate that the interviewer might ask questions about NSSI. Mentioning NSSI explicitly might have construed some participants as having an experience of particular research interest, potentially alienating some individuals from participating as not all individuals who previously self-injured consider it salient of their lived experience (Kelada, Hasking, Melvin, et al., 2018; Long et al., 2015). Moreover, it might have centred the interview on the topic of NSSI, potentially diverting attention from other aspects that participants considered equally or more

[3] Those who agreed to participate (n = 28) could not be statistically discerned at α = .05 from those who did not agree (n = 91) on relevant T1, T2, and T3 measures: Welch's $|t|$ = .03–1.87, p = .09–.98. Thus, no quantitative pattern related to non-participation could be identified. Self-selection bias might nevertheless an issue, such that the interview situation deterred individuals unwilling or unable to talk about their lived experiences (Alvesson, 2010). However, in accordance with the narrative method, the results should be considered in terms of transferability rather than generalizability/representativeness (Andrews, 2020) – that is, when the results are applicable to other contexts or lived experiences and when they are not (e.g., Tracy, 2010).

salient in their life course (Potter & Hepburn, 2005). Thus, the information letter described that the interview would be about their life story from lower secondary school onwards, including but not limited to distressing life events or mental health problems they might have experienced.

Those who agreed to participate were interviewed in autumn 2018 at Lund University, in a remote office where participants would not run into any university students or employees when arriving at and leaving the interview. Jonas Bjärehed, a licensed clinical psychologist with clinical and research experience of NSSI and mental health, conducted all the interviews. The length of the interviews ranged from 46 to 82 minutes (*M* [*SD*]= 66 [13] minutes). All interviews followed a semi-structured interview guide that outlined the general themes (e.g., "Do you remember the questionnaires that you filled out in 2006 and 2007? What can you remember about that time?" and "What would you say has affected your life the most?") and included some prompts (e.g., "How would you describe your family situation when you went to lower secondary school?" and "Has something difficult happened in your life that you would like to talk about?"). However, the interviews were primarily guided by the interviewee's story rather than the interviewer's questions, such that the interviewer mostly asked for clarifications or to expand on specific topics or narratives already mentioned. Where the interviewees themselves did not mention NSSI or self-injurious behaviour, the interviewer prompted interviewees about these topics in a considerate and context-sensitive manner (e.g., "Did you try to harm yourself in any other way than what you said about [intentionally starting] fights?" or "One thing also mentioned in the questionnaires was self-harm, or things you do that might not be good for you. How was that for you [when growing up]?"). However, the interview did not linger on the topic if the participant framed any recalled events as unimportant to their story. If the participants expressed discomfort when being asked about NSSI or any other potentially sensitive or stigmatized topic that arose spontaneously, the interviewer reiterated the participant's right to deny answering questions and moved on. Before the analysis, all interviews were transcribed verbatim and any directly identifying information such as names of people and locations were removed.

Data analysis

The data in Paper III was analysed using narrative analysis, inspired by analytic steps described by Crossley (2000) and Hiles and Cermák (2008). Narrative analysis from a critical realist-perspective is about studying the meaning-making of past, current, and imagined experiences – that is, how individuals relate to previous and potential events in their life and how these events are integrated into one's sense of self (Hiles & Cermák, 2008). Thus, this approach aims to account for a person's whole narrative and especially the sequence of events therein. Sequence entails temporality, but also intentionality and thematic coherence (Crossley, 2000).

However, in comparison to other qualitative methodologies such as thematic analysis, there is limited consensus in narrative psychology about how the analysis should be conducted (Andrews, Squire, & Tamboukou, 2013). Consequently, the analytic steps in Paper III were inspired by previous empirical and theoretical work, but also applied some novel approaches described in further detail below.

NVivo 12 for Windows (QSR International) was used for the qualitative analysis. After reading each transcript several times to familiarize myself with the narratives and the participants, I coded my initial impressions about the tone, imagery, and broader themes and patterns in nodes. As described by Crossley (2000), the tone of a narrative entails both its content and how it is told, such as if a story seems pessimistic or optimistic. Imagery relates to the discourses, such as the use of analogies or location and character descriptions. Themes and patterns identify recurrent motivations and emotions as well as potential inconsistencies and changes over time. These nodes about tone, imagery, and themes were subsequently used to identify segments (Hiles & Cermák, 2008), which are self-contained narrative episodes about participants' internal and external contexts. These segments were added into an event-history matrix (Miles et al., 2014), which is a display of the relationships between events through their temporal order, intentionality, and thematic coherence.

Upon reviewing the event-history matrices of each participant, I found that certain events could be considered as *turning points* in individuals' perceived agency. Previous narrative work has similarly characterized turning points as events that significantly alter the conditions of everyday life (Hareven & Masaoka, 1988). Although turning points were described positively within the current project, turning points may also be construed negatively. Turning points are usually only recognized as such against a baseline (Wheaton & Gotlib, 1997), and they are influenced by psychosocial processes both before and after the actual event (Clausen, 1998; Pickles & Rutter, 1994). Therefore, the framework was expanded to include *starting points*, *no points*, and *momentum points* to understand how some events contributed to agentic changes and their impact over time. *Starting points* encompassed descriptions of participants' psychosocial context before a particular turning point, wherein *no points* were events that participants saw as having the potential to bring about change but did not in the end. *Momentum points* were events that affected the extent, continuity, and duration of change associated with the turning point (c.f., Gilligan, 2009; Hareven & Masaoka, 1988). The last step of the analysis consisted of aggregating each identified segment into their corresponding node and identifying the commonalities and dissimilarities between different segments and points.

Ethical considerations

As highlighted by the transformative perspective outlined by Mertens (2017), the present project is informed by the understanding that ethical decisions are made throughout the research process, from the conception of the project to data generation and collection, as well as throughout the analysis and writing up of the results. Consequently, ethical decisions are made at the macro- and micro-levels (Brinkmann & Kvale, 2005). Some macro-ethical considerations are explicated in chapter 1, such as my perspectives on how to conduct ethically attentive research with potentially marginalized individuals. Therefore, this section focuses on micro-ethics, which relate to the participant-researcher relationship. This includes that the procedures for data generation and collection conform to current national legislation, which is the case among the studies included in this thesis – all were approved by the regional ethics review board in Lund (2006/49; 2016/1059; 2018/537). In the discussion below, I go beyond regulations and legislation to focus on the broader ethical principles that influence them (i.e., beneficence, non-maleficence, and respect for persons) and describe some practices in the ethics of care.

Beneficence and non-maleficence

Kitchener and Kitchener (2009) identify beneficence and non-maleficence as two of the most recognized micro-ethical principles. These principles describe how an individual should not be harmed when participating in research and that they should benefit from it, or at least that potential negatives are negligible or outweighed by the positive aspects in a utilitarian sense. In this thesis, one such potential negative is the risk of iatrogenic effects arising from participating in research about NSSI and mental health problems as well as general discomfort in answering questions about difficult life experiences (Lloyd-Richardson et al., 2015).

Iatrogenic effects

A recent meta-analysis by Polihronis et al. (2022) observed no statistically significant iatrogenic effects in relation to participating in research related to mental illness, suicidal behaviours, and NSSI. Different studies utilizing adolescent samples similarly suggest that participation in research about NSSI can have a short-term negative effect on mood (Cha et al., 2016), but no statistically significant long-term iatrogenic effects were identified over 3 weeks (Muehlenkamp et al., 2014), 12 weeks (Lockwood et al., 2018), or a year (Bjärehed et al., 2013). Previous qualitative work corroborates these findings, describing how participation may cause distress by invoking painful memories; however, perceptions of it as helpful in understanding one's experiences and contributing to a worthy cause outweighed any discomfort (Biddle et al., 2013; Littlewood et al., 2021). Participants in Paper

III reported similar experiences. With the aid of a visual analogue scale ranging from 0 cm = *in a very negative mood* to 10 cm = *in a very positive mood* (c.f., Biddle et al., 2013), a slight but non-significant improvement in participants' mood was suggested from before to after the interview ($z = -.77$, $p = .44$). When asked to reflect upon their experiences at the end of the interview, they suggested that participation had been an overall positive experience even though some topics had been difficult to talk about.

Consequently, although potential negative mood effects related to answering questionnaires in adolescence and young adulthood were not assessed, it is reasonable to conclude that any negative effects were minor and temporary in this instance as well. Nevertheless, arrangements were made to protect participants' welfare. For instance, the research assistants collecting data at T1/T2 were either clinical psychologists or final-year students in the clinical psychologist program. The students had by this point received extensive training in conversation methodology and had already worked for three semesters with psychological treatment under supervision. Consequently, the research assistants were all capable of handling questions related to mental health issues. All participants at T3 were also asked to write three things they were grateful for at the end of the questionnaire, which can help mitigate temporary distress associated with responding (Lockwood et al., 2018). Participants who completed the T3 survey or interview were also provided with the contact information of the research group and one of the clinical psychologists working within the project, if they had further questions or concerns.

Respect for persons

The principle of respect for persons entail that research participants should be recognized as active agents, as well as level of trust in the participant–researcher relationship (Kitchener & Kitchener, 2009). Consequently, this section will discuss issues of consent/assent, confidentiality, and privacy (Lloyd-Richardson et al., 2015).

Consent and assent

Informed consent to participate in research on NSSI can be provided by individuals who have reached the legal age of consent, whereas assent is the agreement of participation from someone who cannot give legal informed consent (Lloyd-Richardson et al., 2015). According to §18 of the Swedish ethical review act (Svensk Författningssamling, 2003:460), individuals can give informed consent from 15 years of age if they understand what their participation entails. On the other hand, underage individuals can assent to participation, but their legal guardian must consent. At T1/T2, the project utilized passive guardian consent for underage participants, such that their guardians were informed about the project in advance and had to contact the school or the researchers to withdraw their child from

participation. Passive guardian consent is an uncommon practice in NSSI-related research (Singhal & Bhola, 2017) and requires careful balancing between respecting young people's autonomy and protecting them from exploitation. Requiring active parental consent has been empirically shown to bias the sample towards socially advantaged populations (Eisner et al., 2019), suggesting that it limits the generalizability and transferability of the findings. On the other hand, underage individuals might feel disempowered to withdraw assent or not fully understand what their participation entails to the extent that their guardians would. In the present project, these disadvantages were at T1/T2 balanced by considerations that long-term discomfort and iatrogenic effects were unlikely (as also suggested by contemporary research, e.g., Celio et al., 2003), by providing information about the study orally and in writing, and by the fact that students could withdraw assent/consent by speaking with the teachers/researchers or by handing in a blank survey. Participants at T3 could withdraw consent by contacting the researchers directly and they would not receive further reminders, or they could choose to not answer any questions.

Confidentiality

As discussed by Hasking, Lewis, Robinson, et al. (2019) among others, it is imperative to consider when adolescents' confidentiality should be broken if their responses raise concerns about their own or others' safety. While breaking confidentiality is sometimes necessary to support young people at risk of harm, it may also break trust or cause further conflict with their surroundings (Hasking et al., 2016). In the present project, participants were guaranteed full confidentiality unless requested otherwise. One participant in Paper III reflected on this:

> Interviewer: You [said] you remember the questionnaire and that you, you indicated that you were cutting yourself. Do you remember what you were thinking about it, because […] back then you had not told anyone […]?
> P7: Yes, but it was anonymous […] so there would be no consequences if I told you, […] and you had professional secrecy.

Consequently, confidentiality contributed to a sense of anonymity (although their responses were only pseudonymized) and possibility to be honest in responding to the questionnaires. This finding suggests that the potential benefits of confidentiality outweighed the risk of harm, as the assessed variables might not be sufficient for reliably identifying individuals at risk (for a discussion, see Lloyd-Richardson et al., 2015).

Privacy

It is unlikely that all who assented/consented at T1/T2 understood and remembered that researchers at Lund University would keep pseudonymized records about them. Therefore, being contacted approximately 10 years later could be perceived as

intrusive, although it is commonplace to be contacted with requests to participate in questionnaire (e.g., SCB's Citizen Survey; SCB, 2023) or register (e.g., National Patient Register; Socialstyrelsen, 2023) research in Sweden. To mitigate the effects of the privacy violation, the information letter sent out at T3 described the circumstances of the original data collection. Moreover, those who indicated interest in seeing their old surveys were provided access to them.

Practices of care ethics

According to Edwards and Mauthner (2012), utilitarian (e.g., non-maleficence) and deontological understandings (e.g., respect for persons) of how ethics should be practiced can be complemented through more contextualized ethics of care. Their description of an ethics of care aligns with the transformative paradigm outlined by Mertens (2017), such that sustainable ethical practices are realized in ongoing exchanges (e.g., between the researcher and participant) rather than in the evaluation of whether certain outcomes were achieved or not (e.g., whether participants' privacy could be considered violated). This includes the recognition of asymmetrical reciprocity in interpretative power (Young, 1997), which means that scientific representations should be aligned with – rather than imposed on – the participants' lived experience.

This was particularly important for Paper III, where participants agreed to be interviewed without knowing their data would be used in research on NSSI (as this was not mentioned in the information letter). The reason thereof was that this would have constructed eligible participants as individuals who considered NSSI cessation to be particularly salient of their life story, which would have deterred individuals who considered other experiences as equally or more important to their life stories (c.f., Long et al., 2015). Moreover, as narratives are joint constructions between the interviewee and interviewer such that the former adapts to the expectations of the latter (Mishler, 1986), it could have centred the interview on that topic and diverted attention from other episodes with more importance for understanding participants' narratives (Potter & Hepburn, 2005). These intentions were carried over to the analysis stage as well; in the first reading of the interviews, I tried to bracket (c.f., Gearing, 2004) my own preconceptions of how NSSI cessation should be narrated (i.e., that it would be a strongly intentional process; e.g., Tofthagen et al., 2017). The research questions, and by extension the framing of NSSI cessation in this thesis, were accordingly broadened as NSSI was not as salient as other aspects of participants' narratives. Throughout this revisioning, I maintained and often referred to a reflexive diary to create a space for self-reflection about these processes (Nadin & Cassell, 2006).

Chapter 7: Summary of the results

Paper I

Aims

The aims of Paper I were to estimate the prevalence of NSSI in adolescence and young adulthood and examine whether reporting NSSI in adolescence was a risk factor for reporting NSSI engagement, emotion dysregulation, mental health problems (having received a psychiatric diagnosis, being on sick leave for ≥2 months, and increased levels of self-reported issues related to depression, anxiety, and stress) and lower well-being (decreased levels of flourishing and life satisfaction) 10 years later. Based on earlier studies, the prevalence of NSSI was expected to significantly decrease from adolescence to young adulthood (e.g., Moran et al., 2012), and it was hypothesized that NSSI engagement during adolescence would be related to poorer outcomes in young adulthood relative to not reporting NSSI (e.g., Mars, Heron, Crane, Hawton, Lewis, et al., 2014). In accordance with Hawton et al. (2012), it was also hypothesized that reporting repetitive NSSI (≥5 instances) at both T1 and T2 (in this paper referred to as *stable repetitive NSSI*) would be a stronger predictor of negative outcomes than would *infrequent NSSI* (1−4 instances) or repetitive NSSI reported at only one time (in this paper referred to as *unstable repetitive NSSI*).

Results

Paper I showed that the prevalence of any NSSI (≥1 instance) decreased significantly between adolescence and young adulthood, from about 40% at T1/T2 to 18.7% at T3. The prevalence of repetitive NSSI (≥5 instances) decreased as well from about 18% (T1/T2) to 10.4% (T3). These declines were statistically significant (p <.001). When compared to individuals who did not report NSSI in adolescence (n = 225), young adults in the *stable repetitive NSSI* group (n = 53) reported significantly higher levels of stress (β = .11–.25, p = <.001−.038), anxiety (β = .11−.22, p = <.001−.037), emotion dysregulation (β = .16–.30, p = <.001−.002), and NSSI (β = .24−.28, p <.001) at T3, even when accounting for gender and psychological difficulties in adolescence. They were more likely to score above the

cutoff of BPD (*OR* = 2.99−6.00, *p* = <.001−.043) and to report infrequent (*OR* = 4.52−9.14, *p* = <.001−.019) or repetitive NSSI (*OR* = 11.80−14.40, *p* <.001) as compared to no NSSI at T3 as well. However, differences in life satisfaction (β = -.11, *p* = .019), flourishing (β = -.14, *p* = .003), depression (β = .17, *p* <.001), likelihood for being on sick leave longer than 2 months (*OR* = 5.20, *p* <.001), and having received a psychiatric diagnosis (*OR* = 3.82, *p* <.001) were no longer significant (|Δ|β = .08–.14; |Δ|*OR* = 2.18−2.33) after controlling for gender and adolescent psychological difficulties.

The study also found that young adults who reported *infrequent NSSI* (*n* = 125) and *unstable repetitive NSSI* in adolescence (*n* = 72) differed significantly from those who did not report NSSI on life satisfaction (unstable only: β = -.10, *p* = .034), stress (β = .13–.17, *p* <.001), anxiety (β = .15−.19, *p* <.002), depression (β = .16, *p* = .001), emotion dysregulation (β = .11−.15, *p* = .002−.023), and likelihood for reporting infrequent NSSI (*OR* = 4.55−4.95, *p* <.002) or scoring above the cutoff for BPD (infrequent: *OR* = 2.62, *p* = .02; unstable: *OR* = 2.41, *p* = .07) at T3. However, only associations with anxiety (β = .11–.13, *p* = .008−.020), infrequent NSSI (*OR* = 3.50−3.99, *p* = .004−.024), and depression (infrequent only: β = .11, *p* = .023) remained statistically significant after controlling for gender and adolescent psychological difficulties.

Conclusions

This study found that while the prevalence of NSSI tends to decline as individuals progress from adolescence to young adulthood, approximately one in ten young adults reported engaging in repetitive self-injury within the previous year. People who engaged in NSSI during adolescence, regardless of the frequency and stability (infrequent, unstable repetitive, or stable repetitive), reported a diverse range of mental health problems even 10 years later. However, individuals who engaged in stable repetitive NSSI during adolescence were found to have a particularly higher risk of reporting mental health problems in young adulthood, compared to those who did not report NSSI in adolescence.

Paper II

Aims

The purpose of the second paper was to investigate the stability and change in NSSI engagement at an individual level over a 10-year period. The first aim was to determine how common different developmental patterns of NSSI were, while the second aim was to examine potential risk factors, beyond repetitive NSSI during

adolescence, which could predict these patterns. Predictors of NSSI onset from T1 to T2 found in previous studies included depressive symptoms (Lundh, Wångby-Lundh, Paaske, et al., 2011), psychological difficulties (Lundh, Wångby-Lundh, & Bjärehed, 2011), and poor sleep (Lundh et al., 2013). The third and final aim was to examine the differences in reported emotion regulation, resilience, mental health (i.e., depression, anxiety, stress), and well-being (i.e., flourishing, life satisfaction) among young adults assigned to different developmental patterns of repetitive NSSI.

Results

The pattern of *stable adolescence-limited repetitive NSSI* (i.e., reporting repetitive NSSI at T1 and T2, but not T3; i.e., what is defined as ceasing NSSI in this thesis) constituted a type, such that it was observed more frequently than was estimated by the independence model (2.32 times; $p < .0001$). The results showed that these also constituted most participants who reported repetitive NSSI at both time points in adolescence (34 out of 53; 64.15%), meaning that it was more common to cease rather than continue to self-injure repetitively into young adulthood. However, neither depressive symptoms (*OR* = 1.01−1.84) nor psychological difficulties (*OR* = .99−1.09) and sleep problems (*OR* = .69−1.23) reported at T1 or T2 could differentiate between individuals reporting either stable adolescence-limited or prolonged repetitive NSSI (i.e., repetitive NSSI at T1, T2, and T3; $n = 19$). Additionally, individuals assigned to either of these two patterns were on average not significantly different on any outcome in young adulthood (Glass's δ ranged from .03 for anxiety to .52 for flourishing, $p > .05$). On the other hand, the group reporting *stable adolescence-limited NSSI* scored significantly higher ($p < .05$) on measures of stress, anxiety, and emotion dysregulation (Glass's δ = .59−.82) when compared to those who never reported repetitive NSSI ($n = 328$).

Conclusions

While a larger number of participants than would be expected by chance reported that they had ceased injuring themselves repetitively by the time they reached young adulthood, the study did not find any statistically significant risk factors that could differentiate individuals with this pattern from those reporting prolonged repetitive NSSI. However, the results did suggest that individuals with adolescence-limited stability in repetitive NSSI reported significantly higher levels of stress, anxiety, and emotional dysregulation in young adulthood compared to those who did not report repetitive NSSI at any point. This suggests that challenges related to psychological health are more pronounced in young adults who reported cessation of NSSI compared to those who did not report NSSI.

Extended analyses

Aims

The purpose of the Extended analyses was to build on the inconclusive findings from Paper II, utilizing a less stringent definition of ceasing versus continuing repetitive NSSI. This meant that only one observation of repetitive NSSI at T1 or T2 was sufficient for pattern assignment, since antecedent or subsequent stability could not be precluded and no differences pertaining to (in)stability of engagement in adolescence was hypothesized. However, the cessation pattern was split into two groups based on reports of NSSI at T3, distinguishing between full cessation (i.e., 0 instances) and partial cessation (i.e., 1−4 instances) of repetitive NSSI. This was based on the assumption that this could indicate groups at various stages of the cessation process (e.g., Grunberg & Lewis, 2015).

The first aim of these analyses was to identify whether the continuation or (full/partial) cessation of repetitive NSSI could be predicted by variables not included in Paper II. Relevant predictors were identified from previous longitudinal studies spanning 1−4 years. It was hypothesized that those who ceased NSSI would report a lower frequency and number of methods of injury (Andrews, Martin, et al., 2013; Hamza & Willoughby, 2014; Kiekens et al., 2017), better emotion regulatory capability (Andrews, Martin, et al., 2013; Kiekens et al., 2017), less negative emotionality in their relationships with others (Tatnell et al., 2014), and less pronounced experiences of peer victimization in adolescence (Tilton-Weaver et al., 2019). Based on a review by Heerde and Hemphill (2019), reporting fewer aggressive behaviours was also expected to be relevant.

The second aim was to compare young adults reporting no NSSI, continued repetitive NSSI, and full/partial NSSI cessation since adolescence in terms of emotion regulation, mental health and well-being. Based on earlier work, it was hypothesized that NSSI cessation would be associated with higher scores in emotion regulation, mental health, and well-being than NSSI continuation (e.g., Groschwitz et al., 2015; Turner et al., 2021), but that both these groups should score lower on these variables relative to those who never reported NSSI (e.g., Mummé et al., 2017). Furthermore, the full cessation group was hypothesized to be faring better in young adulthood than the partial cessation group.

Results

Prospective relationships between T1/T2 variables and reports of cessation or continuation of repetitive NSSI in young adulthood are shown in Table 4−7 (all tables are available at the end of the chapter). Reporting NSSI cessation (n = 119), and more specifically full cessation of repetitive NSSI (n = 99), was associated with

lower frequency of engagement in NSSI (*OR* = .77−.78, *p* = .006−.008) and fewer numbers of methods used (*OR* = .96−.97, *p* = .015−.027) than was reporting continuation of repetitive NSSI (*n* = 30) in the bivariate but not multivariate (*p* >.12) model. The multivariate model suggested that communicative emotion regulatory strategies (i.e., "I speak with friends on the phone" and "I speak with friends about how I feel") were more frequently used among those reporting full cessation of repetitive NSSI than among those reporting partial cessation (*OR* = .69, *p* = .016; bivariate model: *OR* = .82, *p* = .076).

The exploratory follow-up tests shown in Table 8 suggest that the lack of significant prospective relationships could be due to between-group similarities (*p* >.05) in variables related to adolescent psychosocial functioning among those reporting repetitive NSSI at T1/T2, regardless of how those reports changed at T3. However, individuals assigned to a pattern that included reports of repetitive NSSI in adolescence scored significantly higher in rumination/negative thinking (Cohen's *d* = 1.29−1.59), depressive symptoms (*d* = 1.12−1.52), negative emotions towards parents (*d* = 1.03−1.18) and peers (*d* = .67−.83; however, *p* = .071 for partial cessation), psychological difficulties (*d* = 1.23−1.44), sleep problems (*d* = .86−1.19), direct aggression (*d* = .64−.72), and direct victimization (*d* = .85−1.03) when compared to those reporting no NSSI at either T1/T2 or T3 (*n* = 232). Adolescents assigned to the group who reported full cessation of repetitive NSSI suggested that they used communicative strategies for emotion regulation more often than those who never reported NSSI (*d* = .34).

Comparisons of young adulthood outcomes (Table 9) suggest that participants who ceased NSSI fully and participants without NSSI experience scored similarly on well-being measures. However, both these groups scored significantly higher in flourishing (Cohen's *d* = .80−.93) and somewhat higher in life satisfaction (*d* = .29−.65), when compared to those who continued reporting repetitive NSSI. On measures of mental health problems – including depression, anxiety, and stress – those without NSSI experience scored significantly lower than did those in all other patterns (*d* = .39−1.11), and individuals in the other patterns were in turn not significantly different to each other on average. Not reporting any NSSI experience was also associated with the lowest score in emotion dysregulation (*d* = .42−1.10). On the other hand, participants reporting the full cessation of repetitive NSSI scored significantly lower in emotion dysregulation when compared to those who continued to report repetitive NSSI (*d* = .67), and tentatively lower compared to those reporting partial cessation (*d* = .58).

Conclusions

Akin to Paper II, attempts to predict reports of (fully/partially) ceasing or continuing repetitive NSSI into young adulthood were mostly inconclusive or inconsistent in the Extended analyses. A notable exception was that full NSSI cessation was

associated with higher endorsement of communicating with friends as a strategy for emotion regulation relative of partial cessation. Reporting repetitive NSSI at least once in adolescence was associated with poorer psychosocial functioning at that time, when compared to not reporting any NSSI. Consequently, the comparisons on mental health and well-being outcomes in young adulthood seem to suggest an improvement in well-being and emotion regulation among those who ceased NSSI fully, as they scored higher on these variables than did those who reported that they continued to self-injure repetitively. However, the level of mental health problems among people who reported full cessation of NSSI was, on average, statistically similar to that of people who continued to report repetitive NSSI and was more pronounced than that among people who never reported NSSI. Consequently, while full NSSI cessation is associated with higher well-being, mental health problems may nevertheless persist in individuals with this pattern.

Paper III

Paper III applied a novel narrative framework to study how young adults narrate agency in relation to different life events, and how these events were narrated in relation to NSSI cessation and/or psychological growth. The *starting point* of participants' narratives was characterized by low agency, such that they perceived themselves as impeded by difficult life circumstances (e.g., family conflict, peer victimization) and mental health problems (e.g., depression, sadness, loneliness), and were unable to act to change their situation – this included seeking support from others, such as healthcare professionals. Although several participants said that they had been in contact with healthcare or social services at this stage in their narratives, none suggested that it improved or changed anything related to their context or mental health. As they saw *no point* in trying to change the situation, participants suggested that it could only be endured. NSSI was one of the methods they used for enduring. Ceasing NSSI was at this point narrated as a change of coping strategy rather than an indicator of their life circumstances or mental health improving.

Most participants (10 of 11) recounted a *turning point* subsequent to the *starting point*. A turning point was narrated as a pivotal event or experience that enabled agency within a domain that was important to them. These turning points could be thematized as gaining a sense of belonging, being liberated, or gaining important perspectives on their goals and values. While the turning point contributed to heightened well-being, personal growth was narrated as requiring a sense that they had reached different *momentum points*. Momentum points included managing adversity effectively, such that they felt enabled to utilize support from others or trust in their own ability to resolve difficult situations. Participants also suggested that they could move on from experiences that could not be effectively managed, by reconstructing these as events that offered personal insight. Subsequent

achievement of different milestones made life improvements tangible, which further contributed to well-being and motivated participants to continue changing their lives. Ceasing NSSI during the momentum points was attributed to a sense that agency had made self-injury superfluous, since they no longer had to endure challenging times.

Conclusions

The narratives analysed in Paper III suggested that NSSI cessation was only indicative of psychological growth within life contexts that enabled agency. While no participants narrated a complete absence of adversity and psychological distress in their lives, sensing agency meant that they no longer had to just weather difficult experiences – instead, agency meant that they viewed themselves as capable of reconstruing negative experiences and gaining momentum from positive experiences. This made psychological growth possible despite past, current, and potential future difficulties.

Paper IV

Aims

The purpose of the fourth paper was to examine whether positive events, in combination with the absence/presence of negative events, retrospectively reported to have occurred within different time frames could differentiate young adults reporting either (full/partial) cessation or continuation of repetitive NSSI since adolescence. It was hypothesized that reporting repetitive NSSI in adolescence, regardless of continuation/cessation in young adulthood, would be associated with reporting more negative events at this time (c.f., Liu et al., 2016). Based on the findings of Paper III and other qualitative studies (e.g., Buser et al., 2014; Kelada, Hasking, Melvin, et al., 2018; Shaw, 2006), it was hypothesized that the cessation of repetitive NSSI is associated with fewer negative and more positive life events retrospectively reported within the last 5 years. All tests were covaried for resilience,[4] which can shape one's impression of current and past experiences (Luthar et al., 2000) and is suggested to be higher among individuals who have ceased NSSI than among those who currently self-injure (Kim & Hur, 2023; Rotolone & Martin, 2012).

[4] Replacing resilience with emotion regulation produced effects of similar direction and size as reported here.

Results

The results suggest that reporting repetitive NSSI in adolescence was associated with greater odds of reporting having experienced more profoundly negative events within this time frame (i.e., 5 to <10 years ago; *OR* = 2.78−3.89, *p* <.001). Experiences of physical (*OR* = 4.06−5.02, *p* <.004) and sexual assault (*OR* = 6.28−11.46, *p* <.001) were particularly common. The presence of physical/mental illness was also tentatively implied (cessation: *OR* = 7.30, *p* = .003; continuation: *OR* = 5.45, *p* = .071). Those who ceased repetitive NSSI (but not those who continued) also reported more profoundly negative events had occurred within the last year and 1 to <5 years ago, in comparison to those who never reported NSSI (*OR* = 1.59−1.65, *p* = .018−.05). Nevertheless, participants who ceased NSSI reported that they had experienced more positive (*OR* = 1.54, *p* = .043) and fewer negative events 1 to <5 years ago (*OR* = .56, *p* = .01) compared to those who continued NSSI. This pattern of association was tentatively similar (*p* = .01−.099) when NSSI cessation was considered as either full (positive events: *OR* = 1.47; negative events: *OR* = .55) or partial (positive events: *OR* = 2.04; negative events: *OR* = .52). Although no singular negative event was significantly associated with either pattern 1 to <5 years ago (*p* >.10), the odds of having reached a significant life goal 1 to <5 years ago were about twice as high among those reporting NSSI cessation (*OR* = 2.50, *p* = .031) as among those who continued. Additionally, the unified cessation group (*b* = .63, *p* = .056) and specifically those who ceased NSSI fully (*b* = .71, *p* = .037) tended to report higher resilience than did those in the continuation group.

Conclusions

In Paper IV, in accordance with the hypotheses, repetitive NSSI in adolescence was associated with retrospective reports of profound concurrent adversity. In contrast to the hypotheses, this relationship was also suggested within the last five years for those who ceased NSSI. This implies that for adolescents who self-injure repetitively, the higher likelihood of experiencing adverse life events extends later into life as well. Nevertheless, experiencing more positive events such as reaching an important life goal at the transition from adolescence to young adulthood seems to be associated with NSSI cessation as compared to continuation, particularly if fewer negative events occur meanwhile.

Table 4.
Predicting the Continuation (0; n = 30) Versus Cessation (1; n = 119) of Repetitive NSSI From Adolescent Psychosocial Functioning

	Bivariate Model			Multivariate Model		
Variable	*b*	*OR* [95% CI]	*p*	*b*	*OR* [95% CI]	*p*
AERSQ – Rumination/ negative thinking	-.06	.94 [.87−1.01]	.107	-.04	.96 [.86−1.08]	.507
AERSQ – Positive reorientation	.07	1.07 [.94−1.21]	.283	-.01	.99 [.84−1.16]	.918
AERSQ – Communication	.08	1.09 [.92−1.29]	.332	.09	1.10 [.88−1.37]	.414
AERSQ – Distraction	.04	1.04 [.91−1.18]	.573	-.04	.96 [.80−1.15]	.671
AERSQ – Cultural activities	-.02	.98 [.84−1.14]	.794	.00	1.00 [.83−1.20]	.960
DSHI-9r – Frequency of engagement	-.25	.78 [.65−.94]	.008	-.31	.73 [.49−1.09]	.123
DSHI-9r – Number of methods	-.03	.97 [.94−1.00]	.027	.01	1.01 [.94−1.08]	.782
Depression Index	-.02	.98 [.96−1.00]	.110			
ETI – Negative emotions towards parents	-.07	.93 [.86−1.01]	.101	.00	1.00 [.87−1.16]	.972
ETI – Negative emotions towards peers	-.07	.94 [.82−1.08]	.335	.03	1.03 [.84−1.27]	.810
SDQ-s – Psychological difficulties	-.06	.94 [.87−1.02]	.131	-.01	.99 [.87−1.13]	.880
Sleep problems	-.33	.72 [.47−1.10]	.122	-.13	.88 [.52−1.50]	.626
PANIBI – Direct aggressor	-.01	.99 [.87−1.15]	.925	.01	1.01 [.86−1.21]	.902
PANIBI – Direct victimization	-.04	.96 [.87−1.08]	.488	.07	1.08 [.91−1.28]	.388

Note. The Depression Index was not included in the multivariate model as it is comprised of items included in the other variables. The variables represent the average of T1 and T2, or the value at T1 or T2 if there was only one observation. Testing T1 and T2 separately yielded similar estimates to those reported in the table. NSSI = Non-Suicidal Self-Injury.

Table 5.
Predicting the Full (0; n = 99) Versus Partial Cessation (1; n = 20) of Repetitive NSSI From Adolescent Psychosocial Functioning

	Bivariate Model			Multivariate Model		
Variable	*b*	*OR* [95% CI]	*p*	*b*	*OR* [95% CI]	*p*
AERSQ – Rumination/ negative thinking	.02	1.02 [.93−1.12]	.723	-.06	.94 [.80−1.09]	.434
AERSQ – Positive reorientation	.00	1.00 [.86−1.16]	.999	.05	1.05 [.84−1.31]	.672
AERSQ – Communication	-.19	.82 [.66−1.01]	.076	-.37	.69 [.50−.92]	.016
AERSQ – Distraction	.02	1.02 [.87−1.19]	.796	.12	1.13 [.91−1.42]	.287
AERSQ – Cultural activities	.09	1.09 [.91−1.31]	.316	.10	1.10 [.86−1.41]	.442
DSHI-9r – Frequency of engagement	.16	1.17 [.94−1.46]	.150	.20	1.22 [.71−2.11]	.468
DSHI-9r – Number of methods	.03	1.03 [.99−1.07]	.162	.00	1.00 [.92−1.10]	.924
Depression Index	.02	1.02 [1.00−1.05]	.106			
ETI – Negative emotions towards parents	.06	1.06 [.95−1.18]	.274	.10	1.11 [.90−1.38]	.337
ETI – Negative emotions towards peers	.04	1.04 [.87−1.23]	.637	-.15	.86 [.65−1.11]	.268
SDQ-s – Psychological difficulties	.05	1.05 [.95−1.16]	.345	-.01	.99 [.85−1.16]	.891
Sleep problems	.11	1.12 [.66−1.87]	.664	-.11	.89 [.41−1.93]	.772
PANIBI – Direct aggressor	-.07	.93 [.74−1.11]	.463	-.15	.86 [.64−1.09]	.277
PANIBI – Direct victimization	.08	1.08 [.95−1.23]	.229	.07	1.07 [.87−1.31]	.492

Note. The Depression Index was not included in the multivariate model as it is comprised of items included in the other variables. The variables represent the average of T1 and T2, or the value at T1 or T2 if there was only one observation. Testing T1 and T2 separately yielded similar estimates to those reported in the table. NSSI = Non-Suicidal Self-Injury.

Table 6.
Predicting the Continuation (0; n = 30) Versus Full Cessation (1; n = 99) of Repetitive NSSI From Adolescent Psychosocial Functioning

	Bivariate Model			Multivariate Model		
Variable	*b*	*OR* [95% CI]	*p*	*b*	*OR* [95% CI]	*p*
AERSQ – Rumination/ negative thinking	-.06	.94 [.87−1.01]	.103	-.03	.97 [.86−1.09]	.610
AERSQ – Positive reorientation	.06	1.07 [.94−1.21]	.305	-.01	.99 [.84−1.16]	.884
AERSQ – Communication	.11	1.12 [.94−1.33]	.198	.15	1.16 [.92−1.47]	.212
AERSQ – Distraction	.03	1.03 [.91−1.17]	.626	-.06	.94 [.78−1.12]	.491
AERSQ – Cultural activities	-.04	.96 [.83−1.13]	.647	-.03	.97 [.80−1.17]	.720
DSHI-9r – Frequency of engagement	-.26	.77 [.64−.92]	.006	-.32	.73 [.48−1.09]	.124
DSHI-9r – Number of methods	-.04	.96 [.93−.99]	.015	.00	1.00 [.93−1.08]	.901
Depression Index	-.02	.98 [.96−1.00]	.062			
ETI – Negative emotions towards parents	-.08	.92 [.85−1.01]	.070	.00	1.00 [.86−1.18]	.965
ETI – Negative emotions towards peers	-.08	.93 [.81−1.07]	.294	.05	1.05 [.85−1.30]	.671
SDQ-s – Psychological difficulties	-.07	.94 [.86−1.01]	.101	.00	1.00 [.88−1.14]	.962
Sleep problems	-.34	.71 [.46−1.09]	.112	-.12	.88 [.51−1.54]	.656
PANIBI – Direct aggressor	.00	1.00 [.88−1.16]	.964	.03	1.03 [.88−1.24]	.699
PANIBI – Direct victimization	-.05	.95 [.85−1.06]	.357	.05	1.05 [.88−1.26]	.596

Note. The Depression Index was not included in the multivariate model as it is comprised of items included in the other variables. The variables represent the average of T1 and T2, or the value at T1 or T2 if there was only one observation. Testing T1 and T2 separately yielded similar estimates to those reported in the table. NSSI = Non-Suicidal Self-Injury.

Table 7.
Predicting the Continuation (0; n = 30) Versus Partial Cessation (1; n = 20) of Repetitive NSSI From Adolescent Psychosocial Functioning

	Bivariate Model			Multivariate Model		
Variable	*b*	*OR* [95% CI]	*p*	*b*	*OR* [95% CI]	*p*
AERSQ – Rumination/ negative thinking	-.05	.95 [.85−1.06]	.377	-.15	.86 [.68−1.05]	.175
AERSQ – Positive reorientation	.09	1.1 [.89−1.37]	.383	.06	1.07 [.80−1.43]	.654
AERSQ – Communication	-.06	.94 [.75−1.18]	.597	-.11	.89 [.60−1.28]	.538
AERSQ – Distraction	.07	1.07 [.87−1.33]	.522	.05	1.05 [.73−1.51]	.788
AERSQ – Cultural activities	.06	1.06 [.85−1.32]	.602	.16	1.17 [.86−1.66]	.331
DSHI-9r – Frequency of engagement	-.16	.85 [.62−1.14]	.305	-.11	.90 [.45−1.67]	.740
DSHI-9r – Number of methods	-.01	.99 [.94−1.03]	.544	-.02	.98 [.87−1.11]	.780
Depression Index	.00	1.00 [.97−1.03]	.975			
ETI – Negative emotions towards parents	-.02	.98 [.88−1.09]	.694	.15	1.17 [.92−1.51]	.215
ETI – Negative emotions towards peers	-.03	.97 [.80−1.16]	.741	-.20	.82 [.55−1.17]	.289
SDQ-s – Psychological difficulties	-.02	.98 [.88−1.08]	.683	.00	1.00 [.79−1.27]	.981
Sleep problems	-.24	.78 [.41−1.43]	.434	-.87	.42 [.13−1.14]	.108
PANIBI – Direct aggressor	-.06	.94 [.75−1.15]	.556	-.19	.83 [.60−1.12]	.226
PANIBI – Direct victimization	.02	1.02 [.89−1.16]	.786	.28	1.32 [.98−1.88]	.086

Note. The Depression Index was not included in the multivariate model as it is comprised of items included in the other variables. The variables represent the average of T1 and T2, or the value at T1 or T2 if there was only one observation. Testing T1 and T2 separately yielded similar estimates to those reported in the table. NSSI = Non-Suicidal Self-Injury.

Table 8.
Adolescent Psychosocial Functioning Compared Between Different NSSI Patterns

M (*SD*)	1. No NSSI (*n* = 232)	2. Full cessation of repetitive NSSI (*n* = 99)	3. Partial cessation of repetitive NSSI (*n* = 20)	4. Continuation of repetitive NSSI (*n* = 30)	Test statistic (Welch's)	Games-Howell Post-hoc test
AERSQ – Rumination/ negative thinking	13.37 (4.03)	19.39 (5.20)	19.84 (5.06)	21.22 (5.73)	F = 52.79, *p* <.001, η^2 = .330	1 < 2 (*d* = 1.29***), 3 (*d* = 1.41***), 4 (*d* = 1.59***)
AERSQ – Positive reorientation	13.71 (2.93)	13.01 (3.40)	13.02 (2.70)	12.31 (2.88)	F = 2.78, *p* = .049, η^2 = .021	1 > 4 (*d* = .48†)
AERSQ – Communication	5.98 (2.21)	6.76 (2.35)	5.71 (2.30)	6.10 (2.72)	F = 2.83, *p* = .046, η^2 = .023	1 < 2 (*d* = .34*)
AERSQ – Distraction	13.15 (2.72)	13.26 (3.26)	13.46 (2.53)	12.94 (3.06)	F = .17, *p* = .918, η^2 = .001	
AERSQ – Cultural activities	6.03 (2.45)	6.49 (2.63)	7.14 (2.74)	6.74 (2.68)	F = 1.88, *p* = .143, η^2 = .016	
Depression Index	-7.52 (13.24)	10.20 (18.11)	17.60 (19.34)	17.78 (21.75)	F = 42.22, *p* <.001, η^2 = .295	1 < 2 (*d* = 1.12***), 3 (*d* = 1.52***), 4 (*d* = 1.41***)
ETI – Negative emotions towards parents	13.55 (2.98)	17.30 (4.17)	18.46 (5.09)	19.09 (5.98)	F = 31.86, *p* <.001, η^2 = .247	1 < 2 (*d* = 1.03***), 3 (*d* = 1.18**), 4 (*d* = 1.17***)
ETI – Negative emotions towards peers	8.51 (1.98)	10.08 (2.70)	10.40 (3.18)	10.70 (3.16)	F = 13.79, *p* <.001, η^2 = .120	1 < 2 (*d* = .67***), 3 (*d* = .71†), 4 (*d* = .83**)
SDQ-s – Psychological Difficulties	8.11 (3.79)	13.45 (4.80)	14.57 (5.07)	15.25 (6.39)	F = 46.31, *p* <.001, η^2 = .306	1 < 2 (*d* = 1.23***), 3 (*d* = 1.44***), 4 (*d* = 1.36***)
Sleep problems	1.72 (.64)	2.40 (.91)	2.50 (.92)	2.72 (1.00)	F = 24.92, *p* <.001, η^2 = .197	1 < 2 (*d* = .86***), 3 (*d* = .98**), 4 (*d* = 1.19***)
PANIBI – Direct aggressor	6.16 (1.78)	7.89 (2.92)	7.40 (1.82)	7.87 (3.29)	F = 13.32, *p* <.001, η^2 = .116	1 < 2 (*d* = .72***), 3 (*d* = .68*), 4 (*d* = .64*)
PANIBI – Direct victimization	6.84 (2.01)	9.16 (3.30)	10.18 (4.15)	9.85 (4.47)	F = 2.48, *p* <.001, η^2 = .179	1 < 2 (*d* = .85***), 3 (*d* = 1.03*), 4 (*d* = .87**)

Note. The variables represent the average of T1 and T2, or the value at T1 or T2 if there was only one observation. Testing T1 and T2 separately yielded similar results to those reported here. NSSI = Non-Suicidal Self-Injury. † *p* <.10, * *p* <.05, ** *p* <.01, *** *p* <.001.

Table 9.
Mental Health, Well-Being, and Emotion Regulation in Young Adulthood Compared Between Different NSSI Patterns.

M (*SD*)	1. No NSSI (*n* = 232)	2. Full cessation of repetitive NSSI (*n* = 99)	3. Partial cessation of repetitive NSSI (*n* = 20)	4. Continuation of repetitive NSSI (*n* = 30)	Test statistic (Welch's)	Games-Howell Post-hoc test
FS – Flourishing	47.73 (6.81)	46.53 (6.34)	44.90 (8.16)	40.40 (8.80)	F = 6.94, *p* <.001, η^2 = .076	1 > 4 (*d* = .93**); 2 > 4 (*d* = .80**)
SWLS – Life satisfaction	24.93 (6.98)	22.80 (7.45)	23.80 (6.69)	18.43 (9.43)	F = 5.57, *p* = .002, η^2 = .059	1 > 2 (*d* = .29†), 3 (*d* = .65†), 4 (*d* = .78**); 2 > 4 (*d* = .51†)
DASS – Depression	2.58 (3.72)	4.21 (4.55)	5.58 (5.34)	6.81 (5.70)	F = 8.92, *p* <.001, η^2 = .09	1 < 2 (*d* = .39*), 3 (*d* = .65**), 4 (*d* = .88**)
DASS – Anxiety	2.07 (2.44)	3.93 (4.01)	6.00 (4.36)	5.80 (4.94)	F = 15.02, *p* <.001, η^2 = .149	1 < 2 (*d* = .56***), 3 (*d* = 1.11**), 4 (*d* = .96**)
DASS – Stress	5.14 (3.88)	7.38 (5.19)	9.90 (5.53)	10.02 (5.99)	F = 13.56, *p* <.001, η^2 = .125	1 < 2 (*d* = .49**), 3 (*d* = 1.00**), 4 (*d* = .97**)
DERS-16 – Emotion dysregulation	29.79 (12.38)	35.51 (14.62)	44.10 (14.84)	45.91 (16.52)	F = 15.41, *p* <.001, η^2 = .132	1 < 2 (*d* = .42**), 3 (*d* = 1.05**), 4 (*d* = .1.10***); 2 < 3 (*d* = .58†), 4 (*d* = .67*)

Note. NSSI = Non-Suicidal Self-Injury. † *p* <.10, * *p* <.05, ** *p* <.01, *** *p* <.001

Chapter 8: General discussion

In this thesis, I explored two research questions related to mental health and well-being among young adults who have ceased to self-injure since adolescence and the psychosocial conditions that facilitate the cessation of NSSI and psychological growth. The four papers and extended analyses aimed to address some of the limitations of the current body of knowledge and praxis related to these research questions. The analyses were based on quantitative survey data collected from a Swedish cohort of community adolescents in 2007, 2008, and 2017, and data generated through a semi-structured interview protocol in 2018.

The first research question was about how mental health and well-being related to NSSI cessation. I approached it through considering NSSI in adolescence as an indicator/risk factor for poorer psychosocial outcomes in young adulthood (Paper I) as well as accounting for individual patterns of (dis)engagement (Papers II and IV, Extended analyses). Paper I suggested that reporting NSSI in adolescence was associated with experiencing more problems related to emotion dysregulation, as well as poorer mental health and lower well-being, in young adulthood. Stable reports of repetitive NSSI, as compared to infrequent or unstable repetitive NSSI, was a particularly strong risk factor for reporting more pronounced mental health problems 10 years later. Paper II – which accounted for individual stability and change in reports of stable, repetitive NSSI – found that ceasing to report repetitive NSSI before young adulthood was more common than would be expected by chance. However, Paper II did not support any significant differences in mental health and well-being between young adults with stable reports of repetitive NSSI in adolescence who had either ceased or continued to injure repetitively. Instead, the pattern of associations was similar to those observed at the sample level in Paper I. Nevertheless, the Extended analyses, which relied on a broader definition of repetitive NSSI than did Paper II, suggested that the emotion regulatory capabilities and well-being of young adults who reported full cessation of NSSI was higher than that of young adults who continued to self-injure repetitively. Moreover, Paper IV indicated that resilience was higher among young adults who reported full NSSI cessation as compared to NSSI continuation (defined in the same way as in the Extended analyses). This aligns with the narratives of the interviewees in Paper III such that their lives and well-being had improved in many ways since adolescence and that they were more capable of managing difficult experiences than in the past. Nevertheless, the other studies (Papers II and IV, Extended analyses) implied a

continuing presence of psychological and contextual distress for those who ceased repetitive NSSI, that was more pronounced than that of those without experience of NSSI but statistically comparable to those who continued to self-injure repetitively.

In relation to the second research question, which focused on the psychosocial conditions that facilitate NSSI cessation and psychological growth, neither Paper II nor the Extended analyses could reliably differentiate between individuals who either ceased or continued to self-injure on variables related with adolescent psychosocial functioning. Accordingly, I turned my attention to contextual factors, and in Paper III found that the experience of a turning point and several subsequent positive life changes were narrated as contributing to an expanding sense of agency. Sensing agency meant that the participants perceived that they could manage adversity differently than they could before, such that they could utilize social support or move on from their experiences. Therefore, they no longer felt that they had to endure life by injuring themselves, although their narratives acknowledged that difficult things had and would potentially still happen to them. In accordance with the intentionality ascribed to positive life experiences for psychological growth concurrent with NSSI cessation in Paper III, Paper IV found that those who ceased repetitive NSSI retrospectively reported that more positive events had occurred 1 to <5 years ago compared to those who continued self-injuring. Having reached a significant life goal was particularly salient, which in Paper III was narrated as representing tangible milestones that brought happiness and affirmed one's ability to bring about change. While Paper IV also found that participants who ceased NSSI reported experiencing fewer negative events overall, no particular negative event was indicated as more prevalent among those who continued to self-injure repetitively.

In the remainder of this chapter, I compare and integrate these key findings with the existing literature. Additionally, I briefly discuss the implications these findings have for the prevention and treatment of NSSI, given that many adolescents – such as those participating in the present project – will never seek professional help for NSSI (Rowe et al., 2014; Simone & Hamza, 2020) or might not fully benefit from extensive psychotherapy (Warner & Spandler, 2012). Finally, I address the methodological aspects of this thesis and suggest future directions for research.

Integration with previous literature

In accordance with psychosocial models of NSSI (i.e., Hasking et al., 2017; Nock, 2009), this thesis suggests that community adolescents who self-injure repetitively (versus those who do not) are situated in a context of high adversity (Papers III and IV) and experience mental health problems to a greater degree (Paper II, Extended analyses). Such contextual and psychological distress was narrated as limiting

agency in Paper III; within such circumstances, both Paper III and other interview studies (Donskoy & Stevens, 2013; Wadman et al., 2018) suggest that NSSI can be viewed as an effective method of managing distress. This is consistent with previous research on adolescent samples, which has identified associations between NSSI engagement and low self-efficacy (Guo et al., 2022; Tatnell et al., 2014; Xu et al., 2022), emotion dysregulation (Brereton & McGlinchey, 2020; Wolff et al., 2019), and difficulties with coping otherwise (Brereton & McGlinchey, 2020; Guerreiro et al., 2013).

The reciprocity between NSSI engagement and contextual/psychological distress has been used to explain the finding that current NSSI engagement is predictive of future engagement (e.g., Fox et al., 2015). However, predictive capability does not imply stability in NSSI engagement between adolescence and adulthood, only that reporting NSSI in adolescence is a risk factor for engagement in young adulthood. On the other hand, Paper II, Paper IV, and previous work (e.g., Moran et al., 2012; Turner et al., 2021) suggest that most community individuals cease to self-injure (repetitively) before reaching young adulthood. The findings in the present thesis also suggest that most young adults cease to self-injure fully (i.e., did not report any NSSI) rather than partially (i.e., reported infrequent NSSI). Therefore, I now focus on *if* and *how* these young adults who ceased self-injuring repetitively have moved beyond just enduring past, current, and potential future distress that they might experience.

Well-being in the presence of distress

Previous longitudinal studies have suggested NSSI in community adolescents is a risk factor[5] for low levels of well-being (Turner et al., 2021) and mental health problems in young adulthood (Mars, Heron, Crane, Hawton, Lewis, et al., 2014). The findings of Paper I similarly imply that reporting any NSSI in adolescence is a marker for future psychological distress (i.e., higher stress, anxiety, and depression). Additionally, repetitive NSSI engagement reported at both time points was a risk factor for anxiety, stress, and emotion dysregulation. Accounting for repetitive engagement in this manner was not possible in previous longitudinal studies, which relied on a single-item dichotomous measure of NSSI (Borschmann, Becker, et al., 2017; Mars, Heron, Crane, Hawton, Lewis, et al., 2014; Steinhoff et al., 2021; Turner et al., 2021; Wichstrøm, 2009). It is unsurprising that distress continues to be more pronounced in the lives of young people with experience of NSSI, since NSSI (and particularly repetitive and recurrent engagement) is theoretically

[5] Risk factors are variables that have explanatory power in an outcome beyond other relevant factors, whereas markers are correlated variables that are not significantly associated with the outcome after other relevant factors have been accounted for. See also chapter 3.

associated with considerable contextual and psychological distress as well as regulatory difficulties (Hasking et al., 2017; Nock, 2009).

Paper II and the Extended analyses also indicated that contextual and psychological distress remain present in the lives of young adults regardless of whether repetitive NSSI is reported to have ceased or continued. However, and in line with research showing that well-being could serve as a protective factor to NSSI engagement and facilitate NSSI cessation (Hooley & Franklin, 2018; Lewis & Hasking, 2021a), the Extended analyses and Paper IV suggested that young adults who reported full NSSI cessation scored significantly higher in flourishing, and tentatively higher in life satisfaction, than did those who continued self-injuring. Moreover, strengthening the ability to manage adversity in general is often highlighted in the NSSI recovery process (Kruzan & Whitlock, 2019; Lewis & Hasking, 2021a), and individuals who ceased NSSI fully scored higher in emotion regulation (Extended analyses) and resilience (Paper IV) than did those who continued NSSI. They also narrated how they were more resourceful in managing adversity than in the past (Paper III). This thesis contributes to the existent literature by using longitudinally estimated patterns of NSSI to corroborate similar findings from previous studies (Anderson & Crowther, 2012; Duggan et al., 2015; Gray et al., 2022; Halpin & Duffy, 2020; Kelada, Hasking, & Melvin, 2018; Kim & Hur, 2023; Rotolone & Martin, 2012; Whitlock et al., 2015). Additionally, it supports the dual continuum perspective of negative and positive aspects of mental health, such that well-being can co-exist with mental health problems in young adults who ceased repetitive NSSI (c.f., Keyes et al., 2010). Thus, a person who has ceased to self-injure might still experience various mental health problems and ongoing contextual distress, but it is possible to live well despite such difficulties. The findings thus suggest that the cessation of repetitive NSSI can be a sign of improved well-being, resilience, and strengthened capability to regulate emotions otherwise, or at least that improvements might be forthcoming (c.f., Turner et al., 2021). Unfortunately, the quantitative data did not make it possible to conclude at what point well-being and resilience was enabled or the cessation of NSSI occurred, as this could have happened at any point between adolescence and young adulthood. Therefore, the next section will address these questions of how and when moving beyond endurance is possible despite difficult circumstances.

Psychological growth and self-injury cessation following positive events

Attempts to predict the developmental patterns of cessation or continuation of repetitive NSSI in Paper II and the Extended analyses yielded mostly inconclusive or inconsistent findings, especially when compared with earlier literature. For instance, though Steinhoff et al. (2021) found that internalizing problems in adolescence differentiated individuals reporting recurrent NSSI from those reporting NSSI at one time only before the age of 20 ($OR = 1.55$, $p = .002$), neither

Paper II nor the Extended analyses found significant associations between NSSI engagement and psychological difficulties or depressive symptoms (*OR* = 1.02−1.84, $p > .05$; note that the highest *OR* was imprecise such that 95% CI = .60−5.65). Reasons thereof might include low power ($N = 287$ vs. $N = 50-149$) and differing operationalizations of internalizing problems. Furthermore, the follow-up being conducted at a later point (i.e., at 25 instead of at 20 years old) might have been a contributing factor, as studies with the ALPAC cohort have shown that the association between NSSI engagement in adolescence and psychological and behavioural outcomes in adulthood weakens over time (Borschmann, Becker, et al., 2017; Mars, Heron, Crane, Hawton, Lewis, et al., 2014). Other non-significant associations included sleep problems and being victimized by others, although these constructs were predictive of NSSI engagement over a 1-year period in this sample (Daukantaitė, Lundh, & Wångby-Lundh, 2019; Lundh et al., 2013), and in shorter (i.e., 1−3 years) longitudinal studies with adolescents (Latina et al., 2021; Tilton-Weaver et al., 2019) and young adults (Kiekens et al., 2017). The multivariate attenuation of the association between lower frequency of engagement and (partial) NSSI cessation has been observed in previous studies as well (Andrews, Martin, et al., 2013).

The overall difficulty of predicting NSSI cessation from several intra- (e.g., psychological difficulties) and interpersonal variables (e.g., peer victimization) over a 10-year period suggests that when changes in these domains disrupt the reciprocity of NSSI (c.f., Hasking et al., 2017; Nock, 2009), this disruption is more likely to be observed in shorter time frames than in the entire period between adolescence and young adulthood. When considering the entire period, Paper III suggests that a pivotal event (i.e., a turning point) can be ascribed with strong intentionality as bringing about the change, instead of one's own or another's volition. Other research has suggested that despite considerable efforts, detrimental contexts can impede volitional change and NSSI cessation (Buser et al., 2014; Gelinas & Wright, 2013). Therefore, to facilitate psychological growth and cessation of NSSI in the long-term, Paper III suggests that a contextual change is more important than a change in the individual. These findings highlight that while self-efficacy and agency are part of an internal belief system (Bandura, 2006), perceived competence in managing difficult experiences is formed by the conditions in which one is situated; this is known as *bounded agency* (Evans, 2007). Previous work has described how such boundedness to detrimental contexts contributes to use of NSSI as a management strategy among adolescents (Ekman, 2018). Paper III expands on this research by showing that being unbound from such contexts through a pivotal event enables NSSI cessation in conjunction with psychological growth, especially if participants experienced further momentum.

Momentum, as described in Paper III, referred to successfully managing or moving on from adversity and bringing about positive life changes. The first two aspects have been described in theories (Lewis & Hasking, 2021a) and empirical work

(Anderson & Crowther, 2012; Gray et al., 2022; Horgan & Martin, 2016; Kelada, Hasking, & Melvin, 2018; Kim & Hur, 2023; Rotolone & Martin, 2012; Whitlock et al., 2015), as well as in Paper IV and the Extended analyses, which showed that (full) NSSI cessation was related to improved capability to regulate emotion and higher resilience. The latter aspect was further examined in Paper IV, which found that young adults reporting (full/partial) cessation of repetitive NSSI recalled that they experienced more positive events within the last 1 to <5 years than did those who reported NSSI continuation. Moreover, participants in Paper III emphasized that achieving certain life goals such as securing a job or finding someplace to live constituted domains of positive change. Accordingly, Paper IV found that reaching an important life goal 1 to <5 years ago was more commonly reported among those who ceased rather than continued repetitive NSSI. In addition to affirming agency and contributing to well-being (Paper III), having reached an important life goal during the transition from adolescence to young adulthood could signify reaching tangible distance from previous contexts; such a transition may then be viewed as subjectively more successful, acting as a clear demarcation from previous contexts tinged with various stressors and NSSI (Shaw, 2006). Thus, both momentary and sustained cessation of NSSI and the perceived capability to manage otherwise appears to be nurtured by one's context.

In summary, the results in this thesis suggest that NSSI cessation is facilitated by experiencing positive change and positive life events, in addition to some absence of adversity as suggested by Paper IV and other studies (Buser et al., 2014; Shaw, 2006; Sinclair & Green, 2005; Whitlock et al., 2015). In this instance, positive events are those that enable and affirm agency (Paper III) or contribute to feeling better (Papers III and IV). Similar to how well-being aspects might protect against worsening distress and NSSI reengagement (Hooley & Franklin, 2018), these positive experiences might serve as conditions for psychological growth and NSSI cessation over longer periods. However, neither the TTM (Grunberg & Lewis, 2015; Kruzan & Whitlock, 2019) nor the person-centred model of NSSI recovery (Lewis & Hasking, 2021a) explicitly address whether contextual factors constrain, facilitate, and sustain intra- and interpersonal change, which may be particularly important for understanding NSSI cessation in community samples (who sometimes rely on healthcare resources to initiate change). Consequently, this thesis contributes to current understanding of NSSI cessation and psychological growth by highlighting how lived context impacts these processes.

More than just enduring?

The aims of this thesis were to better understand mental health and well-being among young adults who have ceased NSSI since adolescence and identify the conditions that facilitate NSSI cessation and psychological growth. The empirical studies suggested that adversity and mental health problems related to repetitive

NSSI during adolescence can persist into young adulthood (Papers I, II, and IV; Extended analyses). However, the Extended analyses also showed that well-being improved among community young adults who had completely ceased self-injuring, while Paper IV suggested that they were also more resilient. Paper III suggested such psychological growth in difficult life circumstances was possible through sensing agency – namely, that one is capable of taking action to change one's current situation and achieve a visualized future. Agentic beliefs, cultivated during a pivotal event, serve as catalysts for and are strengthened by positive life changes. Such positive events were related to NSSI cessation, even when the presence of negative life events was considered (Paper IV). Based on these findings, I propose a view in line with the person-centred model of self-injury recovery (Lewis & Hasking, 2021a) – that ceasing NSSI is a process *towards* psychological growth, in contrast to the TTM's (e.g., Kruzan & Whitlock, 2019) primary perspective of cessation being the outcome of recovering *from* previous contextual and psychological distress. However, the momentary and sustained process of viewing life as more than just something to endure also relates to the life conditions that facilitate psychological growth. The findings of the present thesis highlight how initiating and sustaining behavioural change within bounded or detrimental contexts is difficult and that ceasing NSSI in such situations does not necessarily mean that life is viewed as more than something that needs to be endured. However, through sensing agency and experiencing positive events signifying achievement, fulfilment, and enjoyment, NSSI cessation and the reconstruction of life into something meaningful and worth living is possible notwithstanding persistent difficulties relating to adversity and mental health problems.

Implications for prevention and treatment

The findings from Paper I suggest that the prevalence of repetitive NSSI (i.e., more clinically relevant engagement; c.f., Ammerman et al., 2017; Brunner et al., 2014) in adolescence is around 18%, which is similar to estimates from another Swedish sample (Zetterqvist et al., 2013). It would not be feasible to admit all these young people into child and adolescent psychiatry, as the Swedish system in many respects is already overburdened (SKR, 2022). Moreover, many of these young people will not seek professional help at all (Rowe et al., 2014; Simone & Hamza, 2020). Furthermore, influencing the lived context in a manner that enables agency and enhances well-being might be difficult. All eight participants in Paper III who had been in contact with social or health care services found these services unhelpful prior to their turning point. Therefore, there is value in strengthening capacities to help young people through difficult situations, until their context changes for the better. This supports the implementation of school-based interventions that target protective factors (e.g., resilience) and encourage help-seeking (De Riggi et al.,

2017; Hasking et al., 2016; Lewis et al., 2020), especially since there is about a 1−2-year delay between engagement in NSSI and seeking help (Lustig et al., 2021). This approach is supported by the present research, wherein regulating emotion by communicating with peers was the only variable that consistently predicted (i.e., both bivariate and multivariate) ceasing NSSI fully or partially. In line with Simone and Hamza (2020), these findings indicate that having the opportunity to confide in peers could be an important protective factor for prolonged distress. Narrations from Paper III suggest this might be the case: participants described that while having a confidant of the same age did not change their situation, it helped them endure or manage challenging times, preventing further deterioration in their mental health. However, those who are able to support young people who self-injure (e.g., peers, family, school staff) often suggest that they themselves need support and information to appropriately respond to NSSI disclosure (Gayfer et al., 2020; Mughal et al., 2022). Therefore, there is value in NSSI advocacy aimed at bridging knowledge gaps between practice and research, addressing stigma, and fostering a positive environment for disclosure (Lewis et al., 2020). The continued development and implementation of programs directed at students (e.g., Baetens et al., 2020; Muehlenkamp et al., 2010) or school staff (e.g., Groschwitz et al., 2017) are promising in this respect.

Additionally, the implementation of evidence-based response and follow-up protocols in schools are important for ensuring an appropriate and adequate response to suspected or confirmed NSSI among students (Lloyd-Richardson et al., 2020b). For students who are referred to child and adolescent psychiatry, adhering to strict, evidence-based treatment protocols (e.g., DBT, CBT) might only be warranted for those with extensive and complex care needs (e.g., in terms of multiple psychiatric diagnoses; Bjärehed & Bjureberg, 2019). This group is likely to constitute a minority of adolescents who participated in the current project (c.f., Buelens, Costantini, et al., 2020; Manca et al., 2014; Zetterqvist et al., 2013). Thus, there is a need to enhance healthcare services that can provide interventions at the intermediate level, between psychiatric treatment and school programs. In the case of NSSI, high-standard TAU/EUC could be an effective and time-efficient method for reducing engagement in NSSI for many young people who self-injure (Bjärehed & Bjureberg, 2019; Kothgassner et al., 2020). Since NSSI is a risk factor for future suicide attempts (Castellví et al., 2017), such care would entail assessment of the frequency, form, and function of NSSI (Bjärehed & Bjureberg, 2019), and the extent that individuals perceive that NSSI is *a* or *the* problem for them (Lewis & Hasking, 2021a, 2021b). This is important because the interviewees in Paper III, as well as participants in other studies (Holliday et al., 2018; Lindgren et al., 2018), recounted problems engaging with healthcare services because they felt their perspectives were invalidated. The reasons thereof can include the healthcare staff's lack of knowledge about NSSI and stigmatization (Lindgren et al., 2018), or being offered care that was centred too strongly on symptom reduction than on their lived context as a whole (Paper III). This suggests that a relational approach could facilitate more

effective therapeutic relationships for many young people who self-injure, which would entail consideration of individual intentionality (e.g., the salience attributed to NSSI) and living well (e.g., current life changes that expand one's sense of agency). Overall, such a non-judgmental and holistic approach characterized by respectful curiosity about the lived experience of young people might improve outcomes and encourage continued help-seeking, even in short interactions (Lewis & Hasking, 2021b).

Methodological considerations

There are methodological strengths and limitations in the present work, which have important implications for the degree to which this thesis can inform effective praxis in research as well as the everyday lives of young people with experience of NSSI.

Operationalization of self-injury (cessation)

Consequences of multi-item assessment

The estimated prevalence rates of any NSSI in adolescence (about 40%) were higher than the prevalence rates suggested in meta-analyses (i.e., about 17−18%) by Muehlenkamp, Claes, et al. (2012) and Swannell et al. (2014). However, these authors also suggested that NSSI prevalence increases if assessed with a multi- rather than a single-item measurement. The effect of single- versus multi-item assessments has also been demonstrated in another Swedish adolescent sample studied by Zetterqvist et al. (2013). They found that about 17% of adolescents answered affirmative on a single-item question about NSSI, while 40% reported lifetime experience and about 35% reported to have self-injured in the last year when assessed with a multi-item questionnaire. These numbers, as well as this study's suggested prevalence of repetitive NSSI (18%), correspond to those reported in Paper I. Nevertheless, the incidence of any and repetitive NSSI in both these Swedish samples is higher than that reported in several European countries included in studies by Brunner et al. (2014) and Gillies et al. (2018).

Consequently, the findings of this thesis highlight the need for further cross-national investigations of why NSSI appears to more common in some countries (e.g., Sweden) than in others (e.g., Hungary; c.f., Brunner et al., 2014; Gillies et al., 2018). Alternatively, the high prevalence is a consequence of overestimation by the multi-item assessment, which might include behaviours less prototypical of NSSI (e.g., preventing wounds from healing; Latimer et al., 2014). Nevertheless, multi-item assessments also constitute a methodological strength in this dissertation because NSSI could be classified as infrequent or repetitive. This increases confidence in that it was able to show that individuals who reportedly ceased NSSI also had self-

injured many times in adolescence, rather than engaged in NSSI as a one-off event with no particular implication for current or future distress (Hawton et al., 2012). However, this definition does not account for versatility, which could have relevance as the number of endorsed methods was univariately implied as a predictor of cessation/continuation of NSSI. Furthermore, cluster analyses performed by Bjärehed et al. (2012) on DSHI-9r data from T1/T2 (performed separately on girls and boys) suggested that the sample could be divided into different subgroups based on methods and frequency of engagement in NSSI. Some of these groups (e.g., generalized high-frequency NSSI, cutting and preventing wound healing) were also overrepresented in groups at risk of psychological difficulties (e.g., carving into skin, preventing wound healing). However, only .08−5.64% of the girls/boys in the present sample could be assigned to a cluster other than no or infrequent engagement in NSSI (Bjärehed et al., 2012), meaning that the group sizes relating to cessation or continuation at T3 were insufficient for statistical analyses. Therefore, further examinations into ceasing particular self-injurious behaviours might utilize qualitative inquiry or even larger samples (see also the discussion about attrition below).

Validity of self-report

In quantitative work that builds on realist assumptions that true knowledge corresponds to real-world conditions (c.f., Kaplan, 1964), self-report is often criticized for being influenced by recall bias, social desirability, self-awareness, and subjective interpretations. These critiques are sometimes directed at self-reports of self-injurious behaviours as well (e.g., Hargus et al., 2009), implying that questionnaire data from young people is less reliable and valid than is data collected via other methods. Spears et al. (2023) noted considerable variability in reports of suicidal behaviours including self-injury according to assessment content (as already discussed above), assessment format, time intervals, and informants. For instance, discrepancies have been found between self-report and register data about NSSI (Borschmann, Young, et al., 2017), between self-report and interview data about NSSI (Bjärehed et al., 2013; Lungu et al., 2019), in assessment of lifetime NSSI at different time points (Daukantaitė et al., 2020; Mars et al., 2016), and between NSSI reported by adolescents and that reported by their parents (Bell et al., 2022). However, it is difficult to a priori determine which of these reports is the most valid (Spears et al., 2023), since only a minority of NSSI instances are recorded in databases (Mars et al., 2016) and many young people hesitate to disclose NSSI in face-to-face interactions (Simone & Hamza, 2020). Consequently, from a pragmatic rather than a traditional realist perspective, these discrepancies are eclectic rather than problematic. In other words, different methods of data collection and generation are complementary, providing different perspectives on the same phenomena. Moreover, self-reporting NSSI in questionnaires had considerable benefits for the present project, affording a sense of anonymity and confidentiality that mitigates stigma and leads to more truthful reporting. Additionally, it is a time-

and effort-effective method to collect and generate data from a large number of individuals such as a community cohort, while also acknowledging the target group as experts of their lived experience (as opposed to relying on others).

Timing and behavioural versus self-perceived cessation

A limitation in Papers II and IV and in the Extended analyses is that NSSI cessation was only operationalized as behavioural cessation when T1/T2 was compared to T3 (i.e., reporting that they had not engaged in NSSI or engaging in NSSI to a lesser degree). However, due to infrequent assessment, it was not possible to conclude at what time cessation had occurred. Timing of NSSI cessation would have been relevant as previous work has negatively correlated time since cessation with reports of psychological distress (Turner et al., 2021). For similar reasons, individuals who started self-injuring later than 2008 but ceased before 2017 could not be accounted for. This could have been addressed by asking all participants at T3 if they had lived experience of NSSI between 2008−2017, complemented by asking them whether they had considered themselves to have ceased injuring themselves or not. In Claréus et al. (2023), we found that self-perceived NSSI cessation was more strongly positively associated with emotion regulation, self-efficacy, and capability of resisting NSSI in risk contexts or when reminded of NSSI, compared to number of days they engaged in NSSI in the last month or year. Consequently, self-perceived cessation was more relevant for outcomes related to agency than behavioural cessation, and would have been an important variable in the present thesis, particularly since Paper III highlighted agency as particularly important. Furthermore, as it is more closely aligned with the person-centred model of NSSI recovery than is behavioural cessation (c.f., Claréus et al., 2023; Lewis & Hasking, 2021a), self-perceived cessation is an important addition to future research on NSSI cessation.

Operationalization of predictors, outcomes, and correlates

The project of which this thesis was a part was innovative at its initiation in 2005. The findings of the thesis clarify which constructs differentiate between adolescents who self-injure repetitively and those who do not, as well as which constructs might predict different longitudinal patterns in NSSI, and which might not. However, since the project's inception, the research field has since undergone substantial changes; it is therefore possible to reflect on several changes to the operationalization of predictors that would have enhanced validity and between-study comparability. For instance, the theoretical models on which this thesis draws suggest that anxiety and depression have a strong link with NSSI (Hasking et al., 2017; Nock, 2009). However, psychological difficulties as assessed by the SDQ-s might be less sensitive in the assessment of mental health problems (Vaz et al., 2016) and changes over time (Wolpert et al., 2015) than more specialized measures. Although the

Depression Index corresponds well with DSM-IV criteria for major depression (APA, 2000), it was also constructed post-hoc and has only been validated within the present sample (Lundh, Wångby-Lundh, Paaske, et al., 2011). Moreover, this measure does not directly assess anhedonia, which is one of the most prominent endophenotypes of depression (Pizzagalli, 2014) and has been independently associated with self-injurious behaviour beyond other depressive symptoms and related factors (Salem et al., 2021). Additionally, recent work has identified that diverse kinds of sleep problems (e.g., insomnia, perceived sleep quality; Bandel & Brausch, 2020) and unassessed strategies of emotion regulation (e.g., positive reorientation; Rådman et al., 2023) are related to NSSI in adolescence, suggesting that broader operationalizations of these constructs would have been relevant. Finally, since differing associations between positive and negative aspects of mental health and NSSI were established in young adulthood, assessing well-being (e.g., life satisfaction) in adolescence might have provided a more nuanced picture of adolescent mental health as well.

Several of the variables used as outcomes and correlates of NSSI cessation in young adulthood have been frequently utilized in other work. However, a relevant limitation to generalizability is that while the DASS-21 assesses common symptoms of depression (e.g., anhedonia, hopelessness) and anxiety (e.g., autonomic arousal, anxious affect), its scores should be interpreted as representing psychological distress more broadly rather than a diagnosable mood- or anxiety-related disorder (c.f., Sinclair et al., 2012). The only instrument not previously applied is the LEQ, which assesses life events that occurred in the past 10 years. In accordance with previous assessments used in the field (Kaess et al., 2020; Keenan et al., 2014; Madge et al., 2011; Voon et al., 2014), respondents tend to report on the number of different kinds of events they experienced rather than on the total number of experiences. However, the LEQ does not account for experiences related to verbal or psychological abuse and maltreatment, family history of mental health problems and NSSI, or symptoms of trauma related to negative events, even though all these variables have been suggested to be related to NSSI engagement among community adolescents (e.g., Andersson et al., 2022; Lang & Sharma-Patel, 2011; Quigley et al., 2017). Therefore, following up on whether young adults reported having such experiences around 5−10 years ago or more recently could be interesting, particularly since those who ceased NSSI reported experiencing more profoundly negative events at all time points than did those who did not report lived experience of NSSI.

Another limitation of the LEQ is that neither salience (i.e., how large of an emotional or cognitive impact an event had) nor agency (i.e., how much control participants felt over the event) were accounted for, which might have been important moderators for the associations discussed here. For instance, perceived salience has been shown to moderate the effect of negative events on well-being (Wilkinson et al., 2023). Events such as parents' or guardians' divorces might play

out very differently (e.g., whether connection to one parent is lost or not, degree of family conflict resolution) and affect one differently in adolescence (i.e., while living at home) than in young adulthood (i.e., when living alone or with a partner). Moreover, agency might be more strongly related to positive experiences such as reaching a significant life goal than to negative experiences such as being in an accident or the death of a close person. Consequently, as salience and agency might impact the relationships between different events and current mental health and well-being, these dimensions should be considered in future assessments.

Methods of data collection and generation

A methodological strength of the present thesis is that it accounted for temporality in the design of the quantitative (i.e., by relying on predominantly longitudinal data) and qualitative papers (i.e., by utilizing narrative analysis). However, there are also important limitations in the methods used for collecting and generating data. For example, the difficulties with predicting NSSI cessation beyond 5 years are not unique to the present thesis (c.f., Groschwitz et al., 2015), highlighting that more frequent assessments would have been desirable to better account for changes within the 10-year gap between T1/T2 and T3. Although the events retrospectively reported by young adults are likely to be salient to them at T3 (Andrews, 2020), events that might have been important at another time could have gone underreported (Paykel, 1997). Moreover, more frequent assessment would also have made it possible to account for incremental changes in mental health and well-being after NSSI cessation, as narrated in Paper III (see also Turner et al., 2021). Finally, more frequent assessment would have enabled tests for longitudinal mediation, as constructing a mediation model with the available data would have resulted in considerable discrepancies in the length of each causal link.

The qualitative results were generated from semi-structured interviews analysed from a critical realist perspective, meaning that life narratives were viewed as accounts of past events as currently experienced (Andrews, 2020). However, any narrative may only be one of many iterations of a life story, and joint construction (i.e., collaborative meaning-making) was not a unit of analysis in Paper III. Joint construction might have been able to better account for the fact that *what* and *how* something is told is dependent on interactions between the speaker and listener (Mishler, 1986). This implies that important nuances might emanate from research that utilizes other kinds of material (e.g., unstructured interviews, observations) and/or analytic approaches that consider discourse (e.g., critical discursive psychology, Foucauldian discourse analysis). Indeed, qualitative pluralism holds promise for corroborating findings as well as providing a multi-faceted understanding of NSSI (Josselin & Willig, 2015).

Attrition and generalizability

This thesis utilizes data from a cohort of young people that went to regular schools in a Swedish southern municipality between 2007 and 2008. Only about half of these responded to a follow-up survey in 2017, suggesting that attrition and the reasons thereof have a major impact on generalizability. Although the T3 non-responders were comparable to the responders in terms of adolescent psychosocial functioning (Daukantaitė, Lundh, Wångby Lundh, et al., 2019), little is known about their current conditions. For example, as the observed sample's educational attainment was higher than the national average (see chapter 6), lower academic performance might characterize the non-responding sample (Hauser, 2005). Furthermore, their mental health might be poorer, and a greater proportion could currently injure themselves compared to the responding sample (Mars et al., 2016). Thus, complementing the current dataset with register data might provide some further insights into the representativeness of the sample in young adulthood. It would also have been valuable to explore the reasons for non-response at T1 and T2, as Paper IV and the Extended analyses excluded those who did not respond at either time point, or Paper II excluded those who did not respond at both time points. For example, it is unknown whether them not being present at the assessment was due to a temporary sickness or part of a larger pattern of school absenteeism, which has implications for the degree of contextual and psychological distress experienced by these adolescents (Ingul et al., 2012).

Furthermore, statistically significant differences in mental health and well-being between those who ceased NSSI and those who continued could only be observed in Paper IV and the Extended analyses. Although the general pattern of association was similar in Paper II, such that differences in well-being (Glass's $\delta = .38-.52$) were stronger than differences in variables related to distress (Glass's $\delta = .03-.19$), the lack of statistical significance suggest that these effects could be random. Therefore, the generalizability of the associations of well-being and positive experiences with NSSI cessation might be limited when a young adult has injured themselves over a longer period or has only partially ceased. Interpretative caution is warranted by that those individuals reporting stable NSSI had different outcomes in Paper I compared to those who reported unstable NSSI. Moreover, those reporting the partial cessation of NSSI tentatively reported more positive experiences 1 to ≤ 5 years ago in Paper IV, but the Extended analyses did not support significant differences in well-being between this group and those who continued. These findings highlight how further attention to individuals reporting recurrent NSSI in adolescence or partial cessation would have been desirable, as both could be related with difficulties in ceasing to self-injure and at what stage one is within a recovery process from NSSI (c.f., Grunberg & Lewis, 2015). However, very few participants reported recurrent NSSI in adolescence and/or partial cessation during young adulthood, highlighting the need for larger samples and utilizing qualitative or

mixed-method approaches to understand the unique conditions of their lived experience.

Transferability

While generalizability relates to the populations that the findings might be applicable to, transferability is concerned with the extent to which the results are applicable to other contexts or lived experiences (e.g., Tracy, 2010). Although this thesis focuses on NSSI and the cessation thereof in a Swedish context, the findings can be transferred to other countries with a shared understandings of NSSI and the transitory period between adolescence and young adulthood. Moreover, while not all young people who experience psychosocial difficulties injure themselves, lacking agency may still be a salient part of their life narratives, as adolescence is a period where agency is not only often bounded by context, but also more strongly bounded by social structures (e.g., age of majority, compulsory school attendance). It follows that the findings of this thesis might not be easily transferrable to individuals who do not cease NSSI and/or flourish until later in life. This could include older people, who do not fit the prototype of someone that self-injures and who might experience more internalized stigma as well as difficulties with finding help (Boyce, 2021).

Finally, this thesis studied NSSI from a psychosocial perspective, focusing on informing effective praxis that is relevant for the community at large, researchers, schools, and outpatient care. However, some individuals who self-injure benefit from inpatient care and/or experience considerable difficulties related to trauma, multiple mental health problems, and other kinds of self-harming behaviours (c.f., Bjärehed & Bjureberg, 2019; Kothgassner et al., 2020). This thesis is not meant to add to an understanding of NSSI cessation among such individuals, who might attribute psychological treatment and interventions as more relevant to the cessation process than the present sample (e.g., Tofthagen et al., 2017). However, since agency has been recognized within some clinical interventions (Lindkvist et al., 2022; Sullivan, 2017), continuing to study agency, well-being, and related aspects holds promise in better understanding the psychosocial context of NSSI and ceasing to self-injure. Agency might also be relevant for understanding the experiences of individuals with a marginalized identity/body (e.g., in terms of gender, sex, ethnicity, and bodily ability), whose everyday experiences of objectification, oppression, and discrimination could intersect with the propensity to self-injure, sensed agency, and other kinds of adversity.

Concluding remarks

I would like to make three concluding remarks about the contributions of this thesis to the field, as well as suggest some further areas of future research beyond addressing the methodological limitations of this thesis.

First, this thesis highlights that NSSI cessation is a complex and multifaceted experience that sometimes occurs in conjunction with psychological growth. Therefore, there is a need for future research that goes beyond the construction of NSSI as a behavioural dysfunction that one recovers *from* and attends to the movement *to* well-being and agency. If approached quantitatively, assessing longitudinal changes in agency and well-being in relation to NSSI engagement would be relevant, as the papers included in this dissertation as well as Turner et al. (2021) have only assessed aspects of well-being as an outcome. If approached qualitatively, it might be promising to apply the narrative framework suggested in Paper III to other samples (e.g., older people, people in inpatient or outpatient care), who might have unique experiences related to agency and NSSI that are not described in this thesis. Furthermore, only one participant in Paper III did not narrate a turning point; thus, a thick description of this experience could not be provided in this dissertation. Future qualitative work could attend to the implications of not having experienced an agentic shift or turn to well-being, as negative case analysis deepens and strengthens theory-building (Mahoney & Goertz, 2004).

Secondly, in this thesis, I approached NSSI from a psychosocial perspective, highlighting how changing life circumstances contribute to NSSI cessation, which in turn contributes to psychological growth. Moreover, since life circumstances were studied both qualitatively (Paper III) and quantitatively (Paper IV), this thesis exemplifies how combining different methods in the same project can provide different perspectives on the same phenomena. However, explanatory pluralism (Maung, 2020) is not limited to methods. Neurobiological, functional, psychosocial, sociological, and gendered perspectives on NSSI each provide partial knowledge about some aspects of the lived experience, which are all complementary. However, psychology and the study of suicidal behaviours including self-injury is often all too firmly situated within realist and (post-)positivistic traditions (c.f., Maung, 2020; Willig, 2019). Therefore, the field would not benefit from further expansion insofar that epistemologically aware and/or trans-disciplinary research that explicitly recognizes the extent and limits of application could help inform future praxis.

Finally, this thesis has relied on survey data and semi-structured interviews, but NSSI as a social phenomenon can make itself known in other forms and contexts that this thesis has not acknowledged. This includes, for example, in printed or digital media (e.g., movies, newspapers) and in communications between friends and strangers (e.g., on social media, in support groups). For future research conducted *with* rather than *on* the lived experience, utilizing such venues for

generating and collecting data as well as action participatory research would complement procedures that are intrinsically tied to the research process itself (e.g., questionnaires, interviews). According to the transformative paradigm as described by Mertens (2017), it is by the recognition of multiple voices that researchers past, present, and future may contribute to making the lives of young people with experience of NSSI more than something that needs to be endured – to something more liveable instead.

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