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Who are we missing? Self-selection bias in nonsuicidal self-injury research

Kealagh Robinson PhD^{1,2}  | Koosje F. Dayer BPsych (Hons)¹  | Sylvanna Mirichlis BPsych (Hons)¹  | Penelope A. Hasking PhD^{1,2}  | Marc S. Wilson PhD³ 

¹School of Population Health, Faculty of Health Sciences, Curtin University, Perth, Australia

²enAble Institute, Faculty of Health Sciences, Curtin University, Perth, Australia

³School of Psychology, Victoria University of Wellington, Wellington, New Zealand

Correspondence

Kealagh Robinson, School of Population Health, Faculty of Health Sciences, Curtin University, Perth, Australia.

Email: kealagh.robinson@curtin.edu.au

Marc S. Wilson, School of Psychology, Victoria University of Wellington, Wellington, New Zealand.

Email: marc.wilson@vuw.ac.nz

Abstract

Background: Despite the threat of self-selection bias to the generalizability of research findings, remarkably little is known about who chooses to take part in non-suicidal self-injury (NSSI) research specifically. We aimed to establish the extent of willingness to take part in NSSI research within a commonly sampled population before assessing whether individual differences in demographic characteristics, NSSI lived experience, and participation experiences were associated with willingness to take part in future NSSI research.

Methods: New Zealand university students ($n = 3098$) completed self-report measures of their NSSI, psychological distress, emotional dysregulation, experience of their participation in the current study, and willingness to participate in future NSSI research.

Results: Most participants (78.2%) indicated that they were willing to take part in future NSSI research. Men, older participants, people with NSSI lived experience, and those with more frequent past-year NSSI were more likely to be willing to take part in future NSSI research. Participants who reported a more positive subjective experience of the current study also indicated greater willingness.

Conclusions: Findings demonstrate systematic differences in who is willing to take part in NSSI research. Future research should implement methodological and statistical approaches to mitigate the impact of self-selection bias on NSSI research.

KEYWORDS

Research participation, study recruitment, volunteer bias

INTRODUCTION

Non-suicidal self-injury (NSSI) is the intentional and direct damage to one's own body without suicidal intent, most commonly by cutting or scratching the skin and hitting of

the body (Resin & Schoenleber, 2015). Although individuals of all ages engage in NSSI, onset of the behavior typically peaks between early adolescence and emerging adulthood (Gandhi et al., 2018; Kiekens et al., 2019), with meta-analytic estimates of 17.2% of adolescents

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and 13.4% of young adults reporting a lifetime history of NSSI (Swannell et al., 2014). NSSI is concurrently associated with psychological distress (e.g., Kiekens, Hasking, et al., 2021), and prospectively predicts poorer socio-emotional functioning (e.g., Gandhi et al., 2017; Robinson et al., 2019), as well as the onset of psychiatric disorders (Wilkinson et al., 2018) and the transition from suicidal thoughts to suicidal behaviors (Keens et al., 2018; Mars et al., 2019). As mental health professionals, researchers, and advocates, our empirical understanding of NSSI—ranging from the simple (“how prevalent is self-injury?”) to the complex (“how can we best support people who want to stop self-injuring?”)—fundamentally relies on individuals who are willing to participate in self-injury research. Self-selection bias may arise when those who participate in research systematically differ from those who do not. Self-selection bias directly threatens the generalizability of research findings and, especially when we conduct research to inform prevention and intervention efforts, risks resulting in ineffective or even harmful recommendations. Despite the importance of evaluating the generalizability of research findings, remarkably little is known about who chooses to take part in NSSI research.

Focusing on demographic characteristics, women and middle-aged individuals are more likely than their peers to participate in research of all kinds (for review, see Dunn et al., 2004). In general, people are more likely to participate in health research when they have lived experience of the topic under investigation (e.g., Dunn et al., 2004; Slegers et al., 2015). In a similar fashion, researchers have speculated that individuals *without* lived experience of NSSI may be less willing to participate in NSSI research because they consider their participation to be worthless or expect the research to be irrelevant to them (e.g., Gratz, 2006). Research into other health behaviors, such as substance use and sexual health, has typically examined self-selection bias by asking participants in an initial study whether they would be willing to participate in a hypothetical future study (e.g., Dawson et al., 2019; Mian et al., 2019). In a similar manner, Muehlenkamp et al. (2015) assessed future research willingness following participation in an online survey, manipulating whether or not the initial survey contained questionnaires assessing NSSI. Compared to participants who did not receive NSSI questionnaires, participants who reported no NSSI history on the NSSI questionnaires were less willing to participate in a similar study in the future. However, this group difference in research willingness was not maintained at 3-week follow-up, suggesting this effect was short-lived (Mellencamp et al., 2015). In contrast, Mattos Feijó et al. (2018) found no difference by NSSI history in willingness to take part in future research (topic not

specified), suggesting that differences in willingness by NSSI status are specific to NSSI research.

Considering differences in research willingness by lifetime NSSI status may obscure meaningful differences among people who self-injure. Initial research suggests that young men who self-injure are less likely to take part in subsequent mental-health research than young women (Heath et al., 2008), perhaps because they are less likely to consider their self-injurious behaviors to be NSSI (Robinson & Wilson, 2020). Beyond gender differences, NSSI is a highly heterogeneous behavior (e.g., Whitlock et al., 2011) and a growing body of evidence suggests that individual differences in NSSI characteristics (e.g., past-year frequency, methods, and functions) are meaningful in that they are associated with psychological factors such as social functioning (e.g., Turner et al., 2012) and suicidal thoughts and behaviors (e.g., Kiekens et al., 2018; Robinson et al., 2021). College students who reported engaging in NSSI behaviors but did not cut themselves (cutting is considered the prototypical NSSI method in lay communities; Lewis et al., 2014) were more likely to report no lifetime NSSI on a screening item, suggesting that they did not consider their self-injurious behavior to be NSSI (Robinson & Wilson, 2020). If an individual does not consider their self-injurious behavior to be NSSI, they may perceive NSSI research to be less relevant to them and thus be less willing to participate.

Looking beyond NSSI research, health research more broadly assumes that an individual's previous experiences of research participation will inform their decision to take part in future research (e.g., Luzurier et al., 2015; Planner et al., 2019). Participating in research encompasses both potential benefits (e.g., personal understanding, altruism, and financial incentives) and potential harms (e.g., time commitment, feelings of distress, and non-voluntary disclosure to caregivers) for participants (Dickson-Swift et al., 2008). NSSI is a stigmatized and often private behavior (Staniland et al., 2022; Whitlock et al., 2011) that people may engage in during periods of distress (e.g., Kuehn et al., 2022). As such, participants may become upset when answering NSSI questionnaires they perceive to be intrusive or socially stigmatizing, or remind them of difficult periods (although there is little evidence to suggest this effect is widespread, Muehlenkamp et al., 2015). Adolescents participating in a comprehensive mental health survey (including NSSI assessment) reported both positive (e.g., self-understanding, helping others, and interest) and negative (e.g., personal experiences and awareness of other's suffering) experiences, although positive experiences were more common (74.1% vs. 15.4%, respectively; Hasking et al., 2015). However, it remains unclear whether participants' research experiences, both positive

and negative, impact their willingness to take part in future NSSI research.

The aims of this study were threefold. First, we aimed to ascertain the level of willingness to take part in NSSI research among a large sample of college students, a population commonly represented in NSSI research (e.g., 42.0% of studies included in meta-analysis estimating NSSI prevalence; Swannell et al., 2014). Second, we aimed to estimate the extent of self-selection bias in NSSI research by determining whether, and to what degree, individual differences in age, gender, NSSI characteristics, psychological distress, or emotion dysregulation were associated with willingness to participate in future NSSI research. Finally, we considered whether participants' experiences taking part in the current study were associated with their willingness to participate in future NSSI research. Given the lack of previous research, all analyses were exploratory (i.e., we formed no a priori hypotheses).

METHODS

Procedure and participants

Participants were recruited from the undergraduate research pool of a public university in Aotearoa New Zealand between 2019 and 2022. At the beginning of each university trimester, all students enrolled in first-year psychology courses ($n = 4426$) were invited to take part in an online screening survey that included assessment of eligibility for future research studies. Participants provided informed consent and ethical approval was obtained from the Victoria University of Wellington's Human Ethics Committee. Participants first responded to the measures assessing NSSI, emotion dysregulation, and psychological distress before reporting their experiences of participation and their willingness to participate in future NSSI research. The final sample comprised 3098 participants (70.0% response rate; M age = 19.27, $SD = 3.40$), the majority of whom were women (74.4%; 24.0% men, and 1.6% gender-diverse [e.g., non-binary, genderfluid]) and Pākehā/New Zealand European (68.8%; 12.4% Māori, 4.2% Pasifika, 10.6% Asian, 3.5% Middle Eastern, Latin American, or African, and 0.5% another ethnicity [e.g., Jewish, Canadian]).

Measures

Demographic information

Participants reported their age, gender, and ethnicity on open-ended measures. Gender and ethnicity responses

were coded with reference to Fraser et al. (2019) and New Zealand Census categories (Stats NZ Tatauranga Aotearoa, 2022), respectively.

Nonsuicidal Self-Injury

NSSI status and characteristics were assessed using the simplified version of the Deliberate Self-Harm Inventory (DSHI-s; Lundh et al., 2007) which asks "Have you ever deliberately (but without wanting to kill yourself) ..." before listing 13 common NSSI methods, such as "cut your wrist, arms, or other areas of your body" to which participants respond on a 5-point scale ranging from "0 – I've never thought about doing this" to "4 – I've done this many times". As in previous research (e.g., Robinson et al., 2021), the DSHI-s response format was modified to include NSSI ideation and to be culturally appropriate within an Aotearoa New Zealand context. The DSHI-s demonstrated high internal consistency ($\alpha = 0.86$).

Participants who reported engaging in zero NSSI methods were classified as having no lifetime NSSI, and those who indicated engaging in one or more methods were classified as reported lifetime NSSI. We also classified lifetime engagement in each method (i.e., have engaged in method, have never engaged in method) and calculated the number of NSSI methods a participant reported engaging in within their lifetime (range: 0–13). Previous research has found that the DSHI provides a reliable index of lifetime NSSI engagement, engagement in each NSSI method, and the total number of lifetime NSSI methods (Gratz, 2001; Latimer et al., 2013). Participants who indicated lifetime NSSI were asked to report their past-year NSSI frequency: "In the last year, how many times have you deliberately hurt yourself (but without wanting to kill yourself)?", with the response format: "never", "1–3 times", "4–5 times", "6–10 times", "11–20 times", "21–50 times", and ">50 times".

Psychological distress

Past-week experiences of depression, anxiety, and stress were measured using relevant subscales of the 21-item Depression, Anxiety, Stress Scale (DASS-21; Lovibond & Lovibond, 1995). Participants responded to such questions as: "I felt I was close to panic" and "I found it difficult to relax" on a 4-point scale ranging from "0 – Did not apply to me at all" to "3 – Applied to me very much, or most of the time". Item responses were averaged to provide an overall score for each subscale. The DASS-21 scales demonstrated excellent internal consistency (Depression: $\alpha = 0.89$; Anxiety: $\alpha = 0.84$; Stress: $\alpha = 0.84$)

and have previously demonstrated good convergent and discriminant validity (e.g., Henry & Crawford, 2005).

Emotion dysregulation

Global emotion dysregulation was assessed using the 16-item brief version of the Difficulties in Emotion Regulation Scale short-version (DERS16; Bjureberg et al., 2016). Participants respond to items such as “When I’m upset, I believe that I will remain that way for a long time” on a 5-point scale from “1 – Almost never (0%–10%)” and “5 – Almost always (91%–100%)”. Item responses were averaged to give an overall score of emotion dysregulation. The DERS16 showed excellent internal consistency ($\alpha=0.95$) and has previously demonstrated excellent test-retest reliability, and convergent and discriminant validity (e.g., Bjureberg et al., 2016).

Participation experiences

Participants were asked to report the extent to which their experience participating in the study was “interesting”, “distressing”, “confusing”, “boring”, “important”, and “unethical” on a five-point scale ranging from “1 – Strongly disagree” to “5 – Strongly agree”. These items are similar to those used previously to assess experience of participation (Wiederman, 1999) and were analyzed individually.

Research willingness

Finally, participants were asked to indicate if they were willing or unwilling to be invited to future NSSI research: “We may conduct other studies as part of [research pool] that relate to self-injury. In these studies, we would like to include both people who have self-injured as well as people who have not. Are you willing to be invited to participate?”

Analysis plan

Statistical analyses were conducted using SPSS 27, with statistical significance set at $p<0.050$. Duplicate cases were identified and removed, retaining the first complete response. Incomplete cases where participants had not reported their research willingness were removed. Missing values analysis revealed that data were not missing completely at random, $\chi^2(7450)=8682.67$, $p<0.001$, however this was deemed as inconsequential, as only 0.40% of values

were missing (Schafer, 1999). Missing data were imputed using expectation maximization. Multivariate outliers ($n=177$) were identified using the Mahalanobis distance (Leys et al., 2018; critical value $df=28$ at $\alpha=0.001$), although Cook’s distance revealed all values were below 1, suggesting that none were influential and thus all were retained (Allen et al., 2014). A series of hierarchical binary logistic regression models tested associations between future NSSI research willingness with demographic, psychological, and NSSI characteristics, and participation experiences. Gender-diverse participants ($n=49$) were excluded from all analyses involving gender to protect against spurious findings. At a descriptive level, 87.75% of gender-diverse participants reported that they were willing to take part in future NSSI research, and 100% reported having engaged in NSSI behaviors at least once in their lifetime.

RESULTS

Lifetime NSSI was common within the sample with 67.4% ($n=2089$) of participants reporting having engaged in one or more NSSI behaviors at least once in their lifetime, with considerable variability in the methods of self-injury and past-year frequency (see Table 1 for descriptive statistics). Most (78.2%, $n=2424$) participants provided their consent to be invited to future NSSI research. In general, participants experienced the current study as interesting and important (77.8% and 80.1% responding “Agree” or “Strong Agree”, respectively), but not distressing, boring, or unethical (24.8%, 14.6%, and 2.0% responding “Agree” or “Strong Agree”, respectively). Table 1 provides descriptive statistics, separated by willingness to take part in future NSSI research. Zero-order associations between variables are provided in the Supplementary Materials S1. Demographic predictors of research willingness were examined using binary logistic regression (see Table 2), indicating that participants with lifetime NSSI, older participants, men, and those who participated in the current study in earlier years were more likely to be willing to take part in future NSSI research. To account for these effects, demographic predictors were entered at Step 1 for all subsequent hierarchical binary logistic regression models. Interactions between NSSI status and age, gender, and participant cohort did not predict future NSSI research willingness, providing no evidence that NSSI status moderates the relationships between demographic characteristics and research willingness.

In a similar manner, psychological characteristics were unrelated to research willingness, with no association between emotion dysregulation, depression, anxiety, or stress symptoms and willingness to take part in future NSSI research. Among those with lifetime NSSI, those reporting more lifetime NSSI methods and a greater past-year NSSI

TABLE 1 Descriptive statistics, separated by research willingness.

Variable	Not willing to participate in future NSSI research <i>M (SD) or %</i>	Willing to participate in future NSSI research <i>M (SD) or %</i>
Age	19.02 (3.00)	19.34 (3.50)
Gender		
Woman	78.3%	73.3%
Man	20.8%	24.9%
Gender diverse	0.9%	1.6%
Cohort		
2019	22.8%	31.4%
2020	32.5%	33.0%
2021	12.3%	17.0%
2022	32.3%	18.6%
NSSI status		
Lifetime NSSI	62.6%	68.8%
No NSSI	37.4%	31.2%
Depression (range: 0–3)	0.74 (0.69)	0.79 (0.72)
Anxiety (range: 0–3)	0.81 (0.68)	0.85 (0.70)
Stress (range: 0–3)	0.95 (0.66)	1.00 (0.67)
Emotion dysregulation (range: 1–5)	2.67 (0.94)	2.72 (0.95)
Participation experiences (range: 1–5)		
Important	3.94 (0.84)	4.11 (0.85)
Interesting	3.69 (0.80)	3.92 (0.73)
Boring	2.57 (1.00)	2.34 (0.99)
Confusing	2.54 (0.99)	2.36 (1.03)
Distressing	2.76 (1.14)	2.50 (1.14)
Unethical	2.01 (0.87)	1.68 (0.79)
Past-year NSSI frequency ^a		
0 times	54.0%	45.7%
1–3 times	25.1%	25.9%
4–5 times	10.0%	8.6%
6–10 times	6.6%	7.0%
11–20 times	2.4%	6.1%
21–50 times	1.7%	4.1%
50+ times	0.2%	2.6%
Number of NSSI methods (range: 1–13) ^a	3.05 (2.07)	3.63 (2.35)
Lifetime engagement in NSSI method ^b		
Banged head or punched self	53.3%	62.3%
Scratched skin	52.6%	57.3%
Cut skin	46.0%	52.1%

TABLE 1 (Continued)

Variable	Not willing to participate in future NSSI research <i>M (SD) or %</i>	Willing to participate in future NSSI research <i>M (SD) or %</i>
Stuck sharp objects into skin	31.8%	42.7%
Prevented wounds from healing	34.1%	40.8%
Burned skin	22.5%	30.7%
Carved words, pictures, or designs into skin	16.4%	25.1%
Bitten self	28.9%	29.6%
Rubbed sandpaper on body	6.6%	9.2%
Rubbed glass into skin	5.7%	6.8%
Broken bones	3.8%	2.2%
Dripped acid onto skin	1.7%	2.3%
Bleach or oven cleaner to scrub skin	1.9%	2.0%

^aLifetime NSSI sample only.

frequency were more likely to be willing to take part in NSSI future research. Focusing on engagement in specific NSSI methods, participants who had carved words, pictures, designs, or other marks into their skin or had stuck sharp objects into their skin were more likely to be willing to take part in future NSSI research than those who had not. In contrast, participants who had deliberately broken their bones were less likely to be willing to take part in future NSSI research than those who had not. No other NSSI method was uniquely associated with NSSI research willingness.

Finally, we considered whether participants' experiences of the current study were associated with their willingness to take part in future NSSI research. Accounting for age, gender, cohort, and NSSI status, the more interesting or important participants rated the current NSSI study, the more likely they were to be willing to take part in future NSSI research. In contrast, the more boring or unethical a participant rated the current NSSI study, the less likely they were to be willing to take part in future NSSI research. Experiences of confusion in the current study did not uniquely predict future NSSI research willingness.

DISCUSSION

Despite the threat of self-selection bias to the generalizability of research findings, remarkably little is known

TABLE 2 Binary logistic regression models predicting willingness to take part in future nonsuicidal self-injury research.

	OR	95% CI	<i>p</i>
Constant	3.56	—	<0.001
<i>Step 1 model</i>	$\chi^2(4) = 63.36, p < 0.001,$ Nagelkerke $R^2 = 0.03$		
Age	1.04	1.01, 1.07	0.023
Gender	0.80	0.65, 0.99	0.037
Cohort	0.77	0.71, 0.83	<0.001
NSSI status	1.32	1.10, 1.58	0.003
<i>Step 2 models^a</i>			
<i>Demographic interactions</i>	$\chi^2(3) = 3.15, p = 0.369,$ Nagelkerke $R^2 = 0.03$		
Age × NSSI status	1.03	0.97, 1.09	0.380
Gender × NSSI status	1.26	0.82, 1.93	0.293
Cohort × NSSI status	1.10	0.93, 1.29	0.273
<i>Psychological characteristics</i>	$\chi^2(4) = 4.19, p = 0.381,$ Nagelkerke $R^2 = 0.03$		
Depression symptoms	1.07	0.89, 1.30	0.461
Anxiety symptoms	1.00	0.81, 1.22	0.967
Stress symptoms	1.08	0.85, 1.37	0.522
Emotion dysregulation	1.01	0.88, 1.16	0.868
<i>Participation experiences</i>	$\chi^2(6) = 118.14, p < 0.001,$ Nagelkerke $R^2 = 0.09$		
Important	1.13	1.01, 1.26	0.031
Interesting	1.24	1.09, 1.42	0.001
Boring	0.89	0.80, 0.99	0.028
Confusing	0.96	0.87, 1.06	0.453
Distressing	0.90	0.83, 0.99	0.021
Unethical	0.74	0.66, 0.83	<0.001
<i>NSSI characteristics^b</i>	$\chi^2(2) = 38.03, p < 0.001,$ Nagelkerke $R^2 = 0.05$		
Number of NSSI methods	1.07	1.00, 1.13	0.039
Past-year NSSI frequency	1.21	1.10, 1.33	<0.001
<i>NSSI methods^b</i>	$\chi^2(13) = 53.85, p < 0.001,$ Nagelkerke $R^2 = 0.05$		
Cut skin	1.02	0.81, 1.28	0.874
Burned skin	1.16	0.88, 1.53	0.304
Carved words, pictures, designs into skin	1.46	1.07, 1.98	0.016
Scratched skin	1.04	0.82, 1.32	0.738
Bitten self	0.84	0.65, 1.09	0.195
Rubbed sandpaper on body	1.20	0.76, 1.90	0.434
Dripped acid onto skin	1.00	0.40, 2.50	0.997
Bleach or oven cleaner to scrub skin	0.82	0.33, 2.01	0.660
Stuck sharp objects into skin	1.38	1.08, 1.77	0.010
Rubbed glass into skin	1.05	0.62, 1.75	0.867

TABLE 2 (Continued)

	OR	95% CI	<i>p</i>
Broken bones	0.35	0.18, 0.68	0.022
Banged head or punched self	1.19	0.96, 1.47	0.118
Prevented wounds from healing	1.20	0.93, 1.54	0.159

Note: Reference categories: Research willingness = Unwilling, Gender = Man, NSSI status = No lifetime NSSI, NSSI methods = No engagement. Significant associations are bolded for clarity.

^aStep 1 entered as the first block of all subsequent hierarchical models.

^bLifetime NSSI sample only, and NSSI status excluded from Step 1.

about who *chooses* to take part in NSSI research. Among a large sample of university students, most participants (78.2%) indicated that they were willing to take part in future NSSI research. Critically, participants who were willing to take part in future NSSI research differed systematically from those who were not. Focusing on demographic characteristics, men, older participants, and those in earlier cohorts were more likely to be willing to part in future NSSI research than their peers. Previous studies have found younger adults aged 18–29 were *less* likely to take part in health research than those aged 30–50, although women were more likely than men to participate (for review, see Dunn et al., 2004). The decrease in research willingness in later cohorts may reflect general declines in research participation and volunteerism (Galea & Tracy, 2007; Leeper, 2019), and/or, given the university student sample, the detrimental impact that COVID-19 remote learning has had on student engagement (e.g., Wester et al., 2021).

As in health research more broadly (e.g., Dunn et al., 2004; Slegers et al., 2015), participants with NSSI lived experience were more likely to be willing to take part in future NSSI research than their peers. Gender, age, and cohort did not moderate the relationship between NSSI lived experience and research willingness. In contrast, Heath et al., (2008) found that young men with NSSI lived experience were less likely to take part in a follow-up mental health study than young women with lived experience. Research willingness also differed *among* people with NSSI lived experience, with a greater number of lifetime NSSI methods and greater past-year frequency predicting greater willingness to take part in future NSSI research. Although these characteristics may indicate more chronic or severe NSSI, psychological distress in general (i.e., recent depression, anxiety, and stress symptoms) was not associated with research willingness, suggesting that any effect of mental health on research willingness is specific to NSSI. Engagement in specific NSSI methods also differentially predicted willingness to participate in future NSSI research. Participants who reported ever carving words,

pictures, or designs into their skin or sticking sharp objects in their skin were more likely to be willing to take part in future NSSI research, whereas participants who reported having ever broken their bones were less likely to be willing to take part in future NSSI research. Given that breaking bones was relatively uncommon in this sample (2.5% of those with NSSI lived experience), this finding should be replicated.

Participants' experiences of the current study were also associated with their willingness to take part in future NSSI research. The more important and interesting, and the less distressing and unethical, participants found the current study, the more likely they were to be willing to take part in future research. Previous research has demonstrated that participants consider both the perceived value of the research (e.g., ability to help others) and the potential for unwanted consequences (e.g., breaking confidentiality) when choosing to disclose their NSSI in research contexts (Mirichlis et al., 2023). Participants also report experiencing both positive (e.g., self-understanding, helping others, and interest) and negative (e.g., personal experiences, awareness of others' suffering) experiences taking part in mental health research (Hasking et al., 2015). These findings support recent calls for greater inclusion of people with NSSI lived experience in all aspects of the research process (Knowles et al., 2022; Lewis & Hasking, 2019).

The current study has two key strengths that increase confidence in the findings. First, in framing the invitation to take part in future NSSI research we explicitly emphasized that the contribution of people without NSSI lived experience would be valuable to the research. Thus, it is unlikely that the difference in research willingness by NSSI status reflects people without NSSI lived experience assuming that their participation would be irrelevant. Second, we assessed research willingness within a large sample of university students, a population that is widely represented in NSSI research (e.g., Batejan et al., 2015; Swannell et al., 2014), and so provide an initial indication of the potential scope of self-selection bias within the NSSI field.

However, findings should be considered in the context of three limitations. First, in their participation in this study, all participants have already demonstrated their willingness to take part in research in general as well as NSSI research in particular—nearly a third (30.0%) of the broader student population either declined to participate or elected to complete their research participation through reading and summarizing research. Guidelines for conducting NSSI research stipulate that participants should provide active informed consent *prior* to participation (e.g., Hasking et al., 2019; Kiekens, Robinson, et al., 2021; Lloyd-Richardson et al., 2015). Thus, it remains unclear how to collect comprehensive information

regarding a person's NSSI without first requiring their initial consent to take part in research. Second, although age was associated with greater research willingness, this finding is likely underpowered as the distribution of age in the sample was heavily skewed; 71.0% of participants were aged 18 or 19. Finally, we assessed willingness to take part in future research rather than *actual* participation in future NSSI research. Previous studies have demonstrated that individuals' willingness to take part in future research may not translate into actual participation (e.g., Johnsson et al., 2010; Nyasani et al., 2018). Thus, the factors which influence willingness to participate in research may differ substantially from those which influence actual research participation.

Although we focused on willingness to take part in NSSI research *overall*, it is likely that research willingness depends in part on what participation entails. Health research more generally has demonstrated that systematic differences in research willingness may be the smallest for survey-based research compared to more intensive research methods (e.g., interviews, psychophysiology; Dawson et al., 2019; Wiederman, 1999). Future research should investigate willingness to take part in different kinds of NSSI research methodologies (e.g., online, in-person surveys, and one-to-one interviews) and tasks (e.g., answering set questions talking about personal experiences, reporting NSSI urges and behaviors in real-time, and viewing NSSI images). Qualitative research could also explore with greater nuance *why* people choose to participate in NSSI research in order to identify barriers and facilitators to research participation (e.g., Mirichlis et al., 2023). Future research should also experimentally manipulate recruitment materials in order to establish which (if any) aspects of recruitment materials exacerbate or ameliorate self-selection bias. For instance, NSSI research recruitment materials that include images of distressed or sad individual people may be more likely to find differences in emotion and emotion dysregulation by NSSI status. Finally, researchers should investigate potential selection bias in instances where people other than the potential participant contribute to the decision to participate in NSSI research (e.g., parents and caregivers; Hasking et al., 2019). Anecdotally, caregivers who are concerned about their child's mental health may be less willing to consent to their child's participation in mental health research (Hasking et al., 2015).

What do these findings mean for self-injury researchers? At a pragmatic level, researchers working with university students can anticipate that recruitment to NSSI studies over-samples men, older students, and those with NSSI lived experience, in particular, those with more frequent NSSI and more varied NSSI behaviors. That is, NSSI

prevalence, particularly NSSI prevalence by gender, will systematically differ from the rest of the student population. Relying on samples with more prevalent and more severe NSSI will also lead to misrepresentation of the true nature of relationships between NSSI and other variables of interest (most likely underestimating effect sizes; Hunter & Schmidt, 1990). Researchers can work to reduce the impact self-selection biases on NSSI research using both methodological (e.g., targeted recruitment of people without NSSI lived experience) and statistical approaches (e.g., Kyron et al., 2020; Rosenberg et al., 2019). Finally, findings reaffirm the importance of prioritizing participants' experiences of research. Working to increase participants' perceptions of importance and interest (e.g., reducing participant burden, building opportunity for connection) while mitigating potential distress and ethical concerns (e.g., distraction buttons, providing study information in accessible formats such as short videos; Lloyd-Richardson et al., 2015)—worthwhile goals in and of themselves—may also increase participants willingness to take part in future NSSI research. In conclusion, as with all research, care should be taken to ensure samples are representative of the population of interest, while being mindful of the impact self-selection bias may have on the NSSI field.

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CONFLICT OF INTEREST STATEMENT


The authors declare that they have no conflict of interest to disclose.

DATA AVAILABILITY STATEMENT

Deidentified data are available at <https://osf.io/avxfq/>.

ORCID

Kealagh Robinson  <https://orcid.org/0000-0002-9367-7445>

Koosje F. Dayer  <https://orcid.org/0000-0002-0707-442X>

Sylvanna Mirichlis  <https://orcid.org/0000-0002-8525-4872>

Penelope A. Hasking  <https://orcid.org/0000-0002-0172-9288>

Marc S. Wilson  <https://orcid.org/0000-0002-3009-5229>

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