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A Comparative Study of Nonsuicidal Self-Injury, Hopelessness and Meaning in Life Before and After COVID-19 in Adolescents

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ABSTRACT

Introduction: Recent research shows that there has been a decrease in meaning in life and an increase in hopelessness and nonsuicidal self-injury in adolescents after the pandemic. The present study aims to address three objectives: (1) to compare the frequency, types and functions of nonsuicidal self-injury before and after the pandemic, (2) to explore the relationship between meaning in life, hopelessness and nonsuicidal self-injury and (3) to study differences in nonsuicidal self-injury, meaning in life and hopelessness levels before and following the pandemic.

Methods: This research was conducted in a community sample of $N = 3800$ Spanish participants, including $n = 1733$ from the pre-pandemic period and $n = 2067$ from the post-pandemic period. Ages ranged between 11 and 19, and the average age was 14.87 ($SD = 1.58$). The sample had an equal distribution by gender, with 50.5% females ($n = 1919$) and 49.5% males ($n = 1881$). Standardized tests such as ISAS-II, BHS and PIL-10 were used, as well as descriptive statistics, Spearman correlations and non-parametric ANCOVAs of Quade controlling for age and gender to compare pre- and post-pandemic variables.

Results: The results revealed a significant increase in the number of functions of nonsuicidal self-injury, in the methods employed and in the levels of hopelessness, along with a notable decrease in meaning in life after the pandemic. However, the estimated prevalence of pre- and post-pandemic nonsuicidal self-injury remained similar. The estimated lifetime prevalence of NSSI was 24.9% ($n = 432$) before the pandemic and 19.4% ($n = 401$) after the pandemic. A positive correlation between nonsuicidal self-injury and hopelessness and a negative correlation with meaning in life were observed.

Conclusions: These findings indicate that the pandemic influenced the mental health of young Spaniards and suggest it may be useful to incorporate meaning-centred interventions in protocols to address nonsuicidal self-injury and hopelessness in adolescent populations.

Summary

- The estimated prevalence of NSSI in Spanish adolescents before and after the COVID-19 pandemic remained similar.
- There has been a significant increase in the number of functions of NSSI, in the methods employed and in the levels of hopelessness, as well as a decrease in meaning in life following the pandemic.
- Meaning in life could be included in interventions with adolescents to prevent or reduce nonsuicidal self-injury and hopelessness.

1 | Introduction

Nonsuicidal self-injury (NSSI) has been defined as the intentional destruction of a part of one's own body without suicidal intent and whose ultimate purpose is not sanctioned by society (Klonsky 2011). The most common forms of NSSI include cutting, burning, hitting, scratching or interfering with wound healing (Klonsky 2011). Differences have been found in the most commonly used methods: Whereas females report cutting and scratching more frequently, males seem to have a preference for hitting themselves (Andover et al. 2010). Different studies have noted a higher prevalence of NSSI among females (Lin et al. 2017; Obando, Trujillo, and Prada 2019).

Klonsky et al. (2015) conducted a factorial analysis of the various functions of NSSI and proposed a structural model consisting of two factors. The first (interpersonal) factor is associated with social functions, including the social reinforcement derived from NSSI. The second (intrapersonal) factor focuses on the personal reinforcement that these behaviours can provide, such as the alleviation of negative emotions. According to the authors, intrapersonal functions are generally more frequent and are associated with greater clinical severity than those carried out for social reasons (Klonsky et al. 2015). In addition, females report more intrapersonal motives than males (Kumar, Pepe, and Steer 2004).

Studies conducted on the prevalence of NSSI in adolescents before COVID-19 yield results ranging from 4.8% in accordance to DSM-5 criteria (Kądziela-Olech et al. 2015) to lifetime prevalence of 17.7% (Zetterqvist et al. 2021). Some studies in China establish 12-month prevalence as high as 29.2% (Tang et al. 2016). The meta-analysis conducted by Xiao et al. (2022) included 62 studies carried out between 2010 and 2021, including 264,638 adolescents: The findings revealed a lifetime prevalence of NSSI at 22.0% and a 12-month prevalence at 23.2%. These results are notably similar to previous research in the field (Lim et al. 2019).

The first comparative study on lifetime prevalence of NSSI before and after the pandemic (Zetterqvist et al. 2021) was conducted among 16- to 18-year-old Swedish high school students. In 2011, data were collected from 3060 adolescents in their first year of secondary school. The other two samples were assessed in 2014 ($N = 5743$; Sample II) and in 2020–2021 ($N = 3258$; Sample III) including third year Swedish high schools. The Self-Injurious Thoughts and Behavior Interview (SITBI; Nock et al. 2007) self-report was used to measure the prevalence of NSSI among adolescents. This study revealed a significant increase in NSSI in adolescence following the pandemic, with prevalence rates gradually increasing from spring 2020 (24.4%) to spring 2021 (30.6%) as the pandemic evolved. Although the authors are cautious in attributing this increased prevalence solely to lockdown, alignment with other studies is highlighted, such as Pieh et al. (2021), indicating heightened mental health issues among adolescents during the COVID-19 health crisis.

De Luca et al. (2022a), on the other hand, conducted a longitudinal study with 1061 high school students in Tuscany (Italy), aged 14–21. They measured internalizing symptoms, emotional regulation, perceived stress related to COVID-19, perceived social support and NSSI. Contrary to other studies, this research did not find an increase in 12-month prevalence of NSSI during the pandemic. Instead, it revealed that only adolescents with pre-existing vulnerabilities appeared to be at increased risk of NSSI during the pandemic. Specifically, adolescents who had already engaged in NSSI exhibited higher levels of internalizing symptoms, as those who had poorer emotional regulation experienced higher levels of COVID-19-related stress, which, in turn, was associated with a higher likelihood of engaging in NSSI. Consequently, other studies are necessary to compare and contrast these results.

Hopelessness (HS) can be defined as a cognitive distortion characterized by a perceived lack of control over future events and the prediction that one will fail or encounter negative consequences in the future (Beck et al. 1974). Authors such as Gong et al. (2019), in a study conducted in China with 915 adolescents aged 12–18, found evidence suggesting that HS could be a mediating factor between self-criticism and NSSI. Similarly, Jiang et al. (2022), in a study with 1026 high school students in China, found a statistically significant negative correlation between hope, gratitude and NSSI, thus proposing that hope and gratitude might act as protective factors against NSSI.

Considered a protective factor against NSSI (Marco et al. 2015; Marco et al. 2021), the meaning in life (MIL) is understood as the perception that one's life is worth living, even when it is endowed with suffering (Lechet and Lipziger 2004). George and Park (2017) define MIL as 'the extent to which individuals feel that their existence is of significance, importance, and value in the world' (2). According to Frankl (2006), MIL is the basic and first motivation of the human being, the feeling that one's own life is significant. Previous studies have found a statistically significant negative correlation between NSSI and MIL in adolescents (Gallego 2019; Marco et al. 2021). Also, Whitlock, Prussian, and Pietrusza (2015) associated MIL with higher emotional regulation strategies, greater self-awareness and greater life satisfaction. In addition, MIL was significantly related to perceived social support from peers, being a key protective factor against NSSI. Conner et al. (2022), in a study conducted with 126 adolescents admitted to psychiatric units in Colorado (USA), found that MIL was a protective factor against NSSI, and the search for MIL was the most robust

negative predictor of NSSI. Similarly, Hu et al. (2023) found that higher MIL was related to reduced levels of NSSI among 930 Chinese high school students.

According to the literature, increased levels of NSSI in adolescents have been observed following COVID-19. In addition, MIL has been identified as a protective factor against NSSI in this population. However, studies have been prominently conducted in Asian countries and in the United States. To our knowledge, there are no studies comparing NSSI, HS and MIL before and after COVID-19 in Spain. Therefore, the main objectives of this study were (1) to compare the frequency or estimated prevalence of NSSI before and after the pandemic among Spanish adolescents; (2) to explore whether there are significant differences in the levels and functions of NSSI, as well as the levels of HS and MIL before and after the pandemic; and (3) to explore the relationship between NSSI levels, functions, HS and MIL in Spanish adolescents.

2 | Methodology

2.1 | Participants

The sample included in this research were 3800 participants from various Spanish regions, namely, Madrid, Valencia, the Basque Country, Castilla la Mancha, Castilla y León, Aragón and La Rioja. For the selection of educational institutions, a network of charter schools across nine regions and one state high school were contacted. Only 15 centres from the above specified regions provided a positive response. Consequently, a convenience sampling approach was taken. However, the sample was comprehensive as it included regions from northern, eastern and central Spain.

Before the pandemic, in 2018, a sample of 1733 adolescents were assessed. Participants were aged 11–19. They were enrolled in charter schools and a state high school. The average age was 14.87 ($SD = 1.58$). Twenty-five per cent of the participants ($n = 433$) came from the region of Valencia, 22% ($n = 382$) from the Basque Country, 17% ($n = 295$) from La Rioja, 20% ($n = 347$) from the region of Madrid, 6% ($n = 104$) from Castilla la Mancha, 6% ($n = 103$) from Castilla-León and 4% ($n = 69$) from Aragón. The sample was equally distributed by gender—53.3% female ($n = 924$) and 46.7% male ($n = 809$).

In the post-pandemic period (2022–2023), 2096 participants were initially enrolled; however, 29 individuals were excluded as they were aged 19 or older. Therefore, the final sample included 2067 participants from five charter schools aged 11–19. The mean age was 14.62 ($SD = 1797$). From a geographical standpoint, 12.8% ($n = 265$) lived in the region of Valencia, 22.6% ($n = 467$) in the Basque Country and 64.6% ($n = 1335$) in the region of Madrid. Additionally, there was an almost equal distribution by sex, with a slightly higher proportion of males, 51.9% ($n = 1072$) compared to females, 48.1% ($n = 995$).

The distribution of the total sample by gender was 50.5% female ($n = 1919$) and 49.5% male ($n = 1881$). Participants were aged 11–19 ($M = 14.75$ and $SD = 1.69$).

2.2 | Instruments

2.2.1 | Inventory of Self-Harm Statements (ISAS; Klonsky and Glenn 2009; Spanish Version Pérez et al. 2020)

The Inventory of Self-Harm Statements (ISAS Part I) was used to assess the presence and frequency of NSSI, whereas the ISAS Part II was used to assess the functionality of NSSI. The ISAS Part I addresses the lifetime frequency of 12 distinct types of NSSI: banging/hitting self, biting, burning, carving, cutting, wound picking, needle-sticking, pinching, hair pulling, rubbing skin against rough surfaces, severe scratching and swallowing chemicals. In addition, to determine the frequency of NSSI, the data collected were rescaled into ordinal Likert-type categories, thus correcting the tendency to infinity of the results of some participants in the sample: (1) no NSSI incidents, (2) 1–4 NSSI incidents, (3) 5–50 NSSI incidents, (4) 51–100 NSSI incidents and (5) above 100 NSSI incidents. This decision was made based on clinical and methodological criteria, considering that five NSSI suffice to diagnose NSSI disorder (American Psychiatric Association 2022) and that higher frequencies of NSSI are associated with greater general psychopathological risk and suicidal behaviour (Andover et al. 2012; Klonsky, May, and Glenn 2013; Pérez et al. 2019). Moreover, the 5-point scale was selected as per methodological recommendations, as this format is more effective and reliable (Preston and Colman 2000). The ISAS Part II includes 13 intrapersonal and interpersonal functions of NSSI. The intrapersonal functions include affect regulation (*when I harm myself I am calming myself down*), anti-dissociation (*when I harm myself I am causing pain so I will stop feeling numb*), anti-suicide (*when I harm myself I am putting a stop to suicidal thoughts*), marking distress (*when I harm myself I am creating a physical sign that I feel awful*) and self-punishment (*when I harm myself I am expressing anger towards myself for being worthless or stupid*). On the other hand, the interpersonal functions include autonomy (*when I harm myself I am demonstrating that I do not need to rely on others for help*), interpersonal boundaries (*when I harm myself I am creating a boundary between myself and others*), interpersonal influence (*when I harm myself I am letting others know the extent of my physical pain*), peer bonding (*when I harm myself I am fitting in with others*), self-care (*when I harm myself I am creating a physical injury that is easier to care for than my emotional distress*), sensation seeking (*when I harm myself I am doing something to generate excitement or exhilaration*) and toughness (*when I harm myself I am seeing if I can stand the pain*). Each function is evaluated with three items, resulting in a total of 39 items.

The ISAS has been validated in Spanish population by Pérez et al. (2020), showing an internal consistency of $\alpha = 0.83$ for both the intrapersonal and interpersonal functionalities. The presence of NSSI is considered positive when the person reported at least one NSSI behaviour within the previous year.

In our sample, adequate internal consistency of intrapersonal functions ($\omega = 0.97$ pre-pandemic and $\omega = 0.99$ post-pandemic) and interpersonal functions ($\omega = 0.94$ pre- pandemic and $\omega = 0.99$ post-pandemic) were observed.

2.2.2 | Purpose-in-Life Test-10 (PIL-10; García-Alandete, Rosa, and Selles 2013)

The Purpose-in-Life Test-10 (PIL-10) is an adaptation of the original 20-item scale PIL (Crumbaugh and Maholick 1969). It assesses MIL and contains 10 items rated on a 7-point Likert-type scale with seven response levels. The total score ranges from 10 to 70, with higher scores indicating a greater sense of MIL. The PIL scale comprises two subscales: (1) Vital Goals and Purposes and (2) Satisfaction and Meaning. Validation studies conducted on Spanish samples have demonstrated good internal consistency ($\alpha = 0.88$) and a high reliability coefficient ($\alpha = 0.85$) (García-Alandete, Rosa, and Selles 2013). In our sample, PIL showed an adequate internal consistency of $\omega = 0.85$ in the pre-pandemic period population and $\omega = 0.89$ in the post-pandemic period.

2.2.3 | Beck Hopelessness Scale (BHS; Beck et al. 1974)

The Beck Hopelessness Scale (BHS) was designed—and as such has been used in the present research—to assess negative expectations about the future. The scale includes 20 items and has been adapted to Spanish by Viñas et al. (2004), achieving an internal consistency of $\alpha = 0.93$. Since its creation, the BHS has been translated into different languages and was recently validated in a Spanish population for suicide attempts (young adults) by Sánchez-Teruel, Robles-Bello, and Camacho-Conde (2020), showing an internal consistency of $\alpha = 0.98$. Using an adolescent population with NSSI, Pérez Rodríguez, Marco Salvador, and García-Alandete (2017) found that the overall internal consistency of the BHS was $\alpha = 0.91$. As regards the sample used in the present research, the BHS showed an overall internal consistency of $\omega = 0.82$ in the pre-pandemic period and of $\omega = 0.85$ after the pandemic.

2.3 | Procedure

The project was approved by the Ethics Committee of the Catholic University os Valencia (Code UCV 2025-2016-25-V.2). Then the charter and high school principals were contacted to sanction the participants' assessment in both recruitment periods. Fifteen schools accepted to participate in the study, eight in the pre-pandemic period (2018) and six in the post-pandemic period (2022), including different regions of Spain, as has been previously detailed. Three schools participated in both sample collections (before and after COVID-19): one in Valencia ($n = 433$ pre-pandemic, $n = 265$ post-pandemic), one in Madrid ($n = 347$ pre-pandemic, $n = 460$ post-pandemic) and one in the Basque Country ($n = 382$ pre-pandemic, $n = 467$ post-pandemic).

After the first contact, the researchers distributed the information about the study to the students' parents and collected their informed consent to assess their children. This included students who were aged 18 years and older. In addition, assent from the students was obtained to ensure that they voluntarily participated in the data collection process. One per cent of the potential participants declined to take part or withdrew from the study prior to completing the questionnaires.

During both recruitment periods, researchers visited the schools to collect data. Participants were provided a link via a QR code for them to scan using their mobile devices. They answered an online questionnaire on the SurveyMonkey platform that included sociodemographic and psychopathological information. The students used their mobile devices to ensure both comfort and anonymity. The collected data were analysed statistically. They were combined with those obtained by the researchers in the pre-pandemic period to analyse the effects of COVID-19 in the adolescent population.

2.4 | Statistical Analysis

Descriptive statistics were employed to calculate the prevalence and frequency, as well as the clinical and demographic characteristics of the data. Due to non-normality of the data, Spearman rho correlations were carried out to explore the relationship among variables in the study. Comparative analyses between pre- and post-pandemic variables were conducted using non-parametric ANCOVAs of Quade for unrelated samples, controlling for age and gender as covariables. All statistical analyses were performed using SPSS 26.0 software (IBM Statistics 2019).

3 | Results

Table 1 presents the descriptive data regarding the estimated prevalence of NSSI among the two adolescent samples, prior to and following the pandemic. The table also delineates the frequencies by ranges and the methods employed for NSSI lifetime assessed with the ISAS. The estimated lifetime prevalence of NSSI was 24.9% ($n = 432$) before the pandemic, and 19.4% ($n = 401$) after COVID-19. It is noteworthy that whereas only 8.8% of participants reported a frequency of 101 or more self-injurious acts in the year prior to the pandemic, this amount rose to 13.2% in the post-pandemic period. Furthermore, the frequencies by type of injury appear to have increased, suggesting that individuals who engaged in self-injury were employing a greater variety of methods. Cutting was reported by 19% ($n = 82$) of the participants before the pandemic and 36.4% ($n = 146$) after.

Table 2 presents the functions of pre- and post-pandemic NSSI.

Table 3 shows the results of the estimated prevalence of NSSI by age in both samples.

Regarding the distribution by sex, Table 4 illustrates the frequency of NSSI among male and females during the pre- and post-pandemic periods.

Non-parametric ANCOVAs of Quade were used due to non-normality of data, comparing NSSI (frequency and functions), HS and MIL pre- and post-pandemic, controlling for age and sex. The results highlight statistically significant differences in all the studied variables. Specifically, there were found higher levels of NSSI intrapersonal ($F = 127.38$, $t = -11.29$, $p = <0.001$) and interpersonal functions ($F = 130.02$, $t = -11.40$, $p = <0.001$) and in HS ($F = 41.18$, $t = -6.42$, $p = <0.001$) in the post-pandemic group and lower levels in MIL-total score ($F = 114.25$, $t = 10.69$, $p = <0.001$), meaning ($F = 111.33$, $t = 10.55$, $p = <0.001$) and

TABLE 1 | Comparison of the estimated prevalence of NSSI before and after the pandemic.

Sample	NSSI	Frequency (*n*)	Percentage (%)
Pre-pandemic	NSSI	432	24.9
	From 0 to 4	32	1.8
	From 5 to 50	210	12.1
	From 51 to 100	37	2.1
	101 and beyond	153	8.8
	Cutting	82	19
	Biting	181	41.9
	Burning	30	6.9
	Carving	41	9.5
	Pinching	170	39.4
	Pulling hair	144	33.3
	Severe scratching	216	50
	Banging or hitting self	202	46.8
	Interfering w/ wound healing	253	58.6
	Rubbing skin against rough surface	124	28.7
	Sticking self w/ needles	35	8.1
	Swallowing dangerous substances	44	10.2
	No NSSI	1301	75.1
Post-pandemic	NSSI	401	19.4
	Missing values	27	1.3
	From 0 to 4	6	0.3
	From 5 to 50	81	3.9
	From 51 to 100	42	2.0
	101 and beyond	272	13.2
	Cutting	146	36.4
	Biting	283	70.6
	Burning	52	13
	Carving	54	13.5
	Pinching	277	69.1
	Pulling hair	218	54.4
	Severe scratching	300	74.8
	Banging or hitting self	301	75.1
	Interfering w/ wound healing	24	62.1
	Rubbing skin against rough surface	169	39.9
	Sticking self w/ needles	71	17.7
	Swallowing dangerous substances	58	14.5
	No NSSI	1666	80.6

TABLE 2 | Functions of pre- and post-pandemic NSSI.

Pre-pandemic	Function	Frequency (*n*)	Percentage (%)
	Affect regulation	126	29.2
	Anti-dissociation	121	28
	Anti-suicide	91	21.1
	Marking distress	113	26.2
	Self-punishment	119	27.5
	Autonomy	65	15
	Interpersonal boundaries	92	21.3
	Interpersonal influence	72	16.7
	Peer bonding	49	11.3
	Revenge	42	9.7
	Self-care	106	24.5
	Sensation seeking	74	17.1
	Toughness	85	19.7
Post-pandemic	**Function**	**Frequency (*n*)**	**Percentage (%)**
	Affect regulation	372	92.8
	Anti-dissociation	335	83.5
	Anti-suicide	252	62.8
	Marking distress	305	76.1
	Self-punishment	335	83.5
	Autonomy	222	55.4
	Interpersonal boundaries	248	61.8
	Interpersonal influence	170	42.4
	Peer bonding	106	26.4
	Revenge	97	24.2
	Self-care	304	75.8
	Sensation seeking	219	54.6
	Toughness	284	70.8

purpose ($F = 71.14$, $t = 8.43$, $p = <0.001$). However, contrary to our expectations, levels in NSSI frequency were found to be higher in the pre-pandemic group ($F = 7.65$, $t = 2.77$, $p = 0.006$) (Table 5).

Table 6 shows results of Spearman correlations between NSSI frequency, HS and MIL and subscales in the pre- and post-pandemic periods. Pre-pandemic NSSI frequency was positively and significantly correlated with HS ($\rho = 0.221$, $p < 0.001$). On the contrary, NSSI was negatively and significantly associated with MIL ($\rho = -0.224$, $p < 0.001$), purpose ($\rho = -0.194$, $p < 0.001$) and meaning ($\rho = -0.218$, $p < 0.001$). In addition, post-pandemic NSSI frequency was positively and significantly correlated with HS ($\rho = 0.281$, $p < 0.001$). Conversely, NSSI was negatively and significantly associated with MIL ($\rho = -339$, $p < 0.001$), purpose ($\rho = -0.259$, $p < 0.001$) and meaning ($\rho = -0.345$, $p < 0.001$).

4 | Discussion

The aims of the present study were (1) to compare NSSI estimated prevalence, levels and functions of NSSI among Spanish adolescents before and after the pandemic; (2) to explore differences in levels of hopelessness and MIL pre- and post-pandemic periods in different samples of adolescents; and (3) to explore the relationship between levels of NSSI, hopelessness and MIL.

In terms of the first objective, the NSSI prevalence remained unchanged before and after the pandemic. This finding is aligned with the research conducted by De Luca et al. (2022a). However, in the sample assessed after the pandemic, there was a notable increase in both the number of methods employed for NSSI and in intrapersonal and interpersonal functionality. Thus, participants

TABLE 3 | NSSI estimated prevalence—distribution by age.

Variable	Age (years)	Frequency (*n*)	Percentage (%)
Pre-pandemic	12	38	8.8
	13	65	15
	14	79	18.3
	15	94	21.8
	16	77	17.8
	17	65	15
	18	6	1.4
	19	8	1.9
	Total	432	100
Post-pandemic	12	60	15
	13	75	18.8
	14	66	16.5
	15	79	19.7
	16	56	14.0
	17	48	12
	18	16	4
	19	0	0
	Lost	1	0.2
	Total	401	100

TABLE 4 | Distribution of NSSI by sex before and after the pandemic.

Variable	Sex	Frequency (*n*)	Percentage (%)
Pre-pandemic NSSI	Male	212	49.1
	Female	220	50.9
	Total	432	100
Post-pandemic NSSI	Male	176	43.9
	Female	225	56.1
	Total	401	100

who engaged in NSSI after the pandemic did so for a greater number of reasons, namely, to cope with various difficulties through a wider array of methods. Ammerman et al. (2018) suggested that a greater number of methods used for NSSI is associated with increased severity, higher suicide risk and a greater likelihood of persistent self-injurious behaviours over time. It is worth noting that NSSI behaviours classified by Lloyd-Richardson et al. (2007) as moderate/severe (such as cutting, burning or carving) were particularly increased in the post-pandemic sample.

Current literature supports the concept of social contagion regarding NSSI among adolescents (Deliberto and Nock 2008; Schwartz-Mette and Lawrence 2019; Zelkowitz et al. 2017), with cutting being a widely recognized behaviour within social media contexts (Memon et al. 2018). Evidence shows that adolescents often learn about NSSI from external sources, such as media or peers, prior to the onset of the behaviour (Jarvi Steele, Jaffe, and Murray 2023). In this study, cutting increased from 19% to 36.4% following the pandemic. Consequently, cutting behaviours may be attributed to an escalation in the social contagion of NSSI, alongside the role of cutting as a coping mechanism for heightened distress experienced by young individuals in the aftermath of the pandemic.

According to our data, NSSI levels did not increase. However, more participants engaged in NSSI over 100 times in the last year. Hence, it seems that those adolescents who already used

TABLE 5 | Non-parametric ANCOVAs of Quade comparing pre- and post-pandemic NSSI, HS and MIL.

Variable	Group	*M* (*SD*)	*F*	*df*	*p*	*t*	*p*
NSSI frequency	Pre	0.68 (1.28)	7.65	1, 3792	0.006	2.77	0.006
	Post	0.67 (1.41)					
NSSI intrapersonal	Pre	0.23 (0.87)	127.383	1, 3769	<0.001	−11.29	<0.001
	Post	1.14 (2.39)					
NSSI interpersonal	Pre	0.09 (0.40)	130.022	1, 3757	<0.001	−11.40	<0.001
	Post	0.72 (1.52)					
MIL	Pre	52.10 (9.75)	114.248	1, 3764	<0.001	10.69	<0.001
	Post	48.80 (10.57)					
Meaning	Pre	29,69 (6.54)	111.333	1, 3770	<0.001	10.55	<0.001
	Post	27.50 (7.08)					
Purpose	Pre	22.41 (4.15)	71.135	1, 3770	<0.001	8.43	<0.001
	Post	21.31 (4.41)					
Hopelessness	Pre	3.63 (3.40)	41.175	1, 3714	<0.001	−6.42	<0.001
	Post	4.52 (4.07)					

Abbreviations: Meaning, Satisfaction and Meaning; MIL, meaning in life; NSSI, nonsuicidal self-injury; Purpose, Purpose and Vital Goals.

TABLE 6 | Spearman correlations between study variables in the pre- and post-pandemic periods.

	HS	MIL	Purpose and vital goals	Meaning and satisfaction
NSSI pre	0.221***	−0.224***	−0.194***	−0.218***
NSSI post	0.281***	−0.339***	−0.259***	−0.345***

Abbreviations: HS, hopelessness; MIL, meaning in life; NSSI, nonsuicidal self-injury.
***Significant correlation at 0.001 level.

NSSI as way of coping with distress and regulating emotions self-injure more frequently and employ more severe methods, consistent with the hypothesis regarding the deterioration of mental health in children and adolescents in the aftermath of the pandemic (i.e., Meherali et al. 2021). Other authors have suggested an indirect effect of pre-existing vulnerabilities on NSSI through higher levels of COVID-19-related stress (De Luca et al. 2022b).

It is also significant that the highest prevalence is reached between the ages of 13 and 15, both preceding and following the pandemic. The results in this study were consistent with Gandhi et al. (2018) and Kądziela-Olech et al. (2015). Gandhi et al. (2019) proposed that one of the risks in adolescence could be the loss of self-identity: The child's self is no longer useful, but the new identity is not yet available to the adolescent. This would result in the absence of identity synthesis and lead to identity confusion, which is related to instability, rebelliousness and problems in social relationships (Gandhi et al. 2019). In fact, the age bracket of 14–15 years is right in the middle of adolescence, making it difficult for individuals to attain a clear sense of identity. Therefore, a strong negative affect could appear. This, coupled with difficulty in regulating their own emotions and the social isolation the pandemic entailed, may have led to NSSI as a means of calming the discomfort.

Similarly, the slightly higher estimated prevalence of NSSI among females after the pandemic is aligned with the findings of a meta-analysis conducted by Wang et al. (2022), and other studies (Du et al. 2021; Kaess et al. 2020) that highlight female gender as a risk factor for NSSI. Research shows that the portrayal of NSSI in the media and the ensuing effects of contagion are likely contributing to the increased prevalence of NSSI among female adolescents across the globe. Maybe female adolescents who identify with characters of those who engage in NSSI are more likely to engage in NSSI regardless of where they live (Moloney et al. 2024).

Our second objective was to compare the levels of HS and MIL before and after the pandemic. In this sense, our findings show a significant increase in HS, as well as a decrease in MIL following the pandemic. However, it was not possible to conclude that this change was exclusively due to the situation experienced by the Spanish population during the pandemic. Despite this, different authors (Du et al. 2021; Fegert et al. 2020; Hasking et al. 2021) refer to multiple elements associated with the pandemic that may have affected the adolescent population, leading to increased psychological distress. These include the near suppression of protective factors associated to school, social distancing, isolation from peers, family pressure or limited access to social services. Along with other factors

associated with the COVID-19 pandemic, such as an increase in sleep disorders (Pieh et al. 2021), they could be related to the rise of HS among Spanish adolescents. In keeping with this, Wootton et al. (2022) conducted a study on 2987 participants in the United States. They found an increase in depression, stress and HS associated with the COVID-19 crisis. However, further studies are needed to elucidate whether these factors can partially explain said increase.

Furthermore, our study underscores a significant decrease in the subjective perception of MIL among Spanish adolescents following the COVID-19 pandemic. Again, it is not possible to determine whether the findings are due to the health emergency. However, it is possible to highlight that over the years, there have been factors that may point in this direction. Baños et al. (2023), in a study conducted with adults during the COVID-19 pandemic, found that MIL (purpose and meaning) significantly decreased during the period of strict COVID-19 lockdown, but this downward trend stabilized when the restrictive lockdown measures started being lifted. The authors explained that the lack of an increase in MIL during the second measurement point, after the strict lockdown, can be attributed to two reasons: The danger still persisted, and not enough time had passed for participants to re-evaluate their experiences. Thus, we hypothesize that the lower post-pandemic levels of MIL observed in our study may be understood in light of the experienced confinement, loss of loved ones, feelings of danger due to illness, various waves of infection (which led to uncertainty about when the danger would end) and measures taken to prevent the spreading of the disease (such as restrictions on schooling and social gatherings, mask usage and travel limitations). This is aligned with the findings by Edwards and Van Tongeren (2020) (i.e., current suffering is associated with a diminished sense of MIL) and MacMurray (2012) (i.e., the most important double fact about our human nature is, first, its mutuality): We can only develop our humanity within the context of our reciprocal care for each other. In this regard, the difficulty in maintaining contact with peers and loved ones, as well as the loss of these individuals or the fear of such loss, may account for the decrease in MIL in our study.

In relation to the third objective, we explored the relationship among NSSI, HS and MIL. The present study found a positive and significant correlation between NSSI and HS, as well as a negative and significant correlation between MIL and NSSI and between MIL Vand HS. Thus, the perception of meaningfulness in one's existence may be a protective factor against NSSI and HS. Similarly, the presence of HS could predict the occurrence of NSSI. Authors such as Aviad-Wilchek and Ne'eman-Haviv (2017) emphasize that feeling that one's existence has meaning is fundamental to confront complicated life situations. The reverse correlation found in our study would support this idea. When participants perceived their lives as purposeful, they were more likely to confront their difficulties in a more adaptive and less self-destructive way. The present research would thus be in line with the studies by Marco et al. (2015), Conner et al. (2022) and Hu et al. (2023), which suggest that MIL is a protective factor against NSSI. Additionally, Humphrey and Vari (2021) found that a greater sense of MIL had a negative correlation with the adverse cognitive reactions experienced by individuals during the COVID-19 pandemic.

Our findings are aligned with authors such as García-Alandete et al. (2019) who found that MIL act as a mediating factor between emotional dysregulation and HS. Similarly, Marco et al. (2017) identified a mediating role of MIL between HS and suicide attempts in a group of females with borderline personality disorder. These results open ways to working indirectly with adolescents through the clarification of values and commitment to them, thereby preventing the emergence of NSSI.

4.1 | Limitations of the Study

There are some limitations to the present study that should be considered. Firstly, this is a cross-sectional study, so it is difficult to draw conclusions about the directionality and causality of the variables. In this sense, longitudinal studies could shed light on directionality. Secondly, it should be noted that the results have been collected using self-reported measures, so there may have been biases when participants completed the online questionnaires. In addition, given the sociodemographic characteristics of the sample—school type and geographic location—the results may not be extrapolated worldwide, but they may well be extrapolated to the rest of Spain. Future studies should explore changes in NSSI and MIL, as well as their relationship with other variables, such as perceived social support, emotional regulation, self-critical attitude and cognitive impulsivity.

Despite the limitations, the study has strengths and provides data that contribute to the literature on NSSI and MIL in the aftermath of COVID-19. First, the sample is large ($N = 3796$). Although it does not represent the whole Spanish adolescent population—insofar as it is not an epidemiological study—having assessed young people from different regions across the country (from the north, east and central Spain) allows for at least some generalizability of the results. In addition, to our knowledge, this is the first study carried out in Spain that explores NSSI, HS and MIL before and after the COVID-19 pandemic. Therefore, it may help us understand differences in adolescents and prevent the onset of NSSI. Considering our results, intervention programs focused on exploring and working with MIL in adolescents may prove useful to reduce the impact of HS by reinforcing life goals and purpose and resignifying personal suffering.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The datasets generated during and/or analysed during the current study are available at request.

References

American Psychiatric Association. 2022. "Other Conditions That May Be a Focus of Clinical Attention." In *Diagnostic and Statistical Manual of Mental Disorders*. American Psychiatric Association Publishing. https://doi.org/10.1176/appi.books.9780890425787.Other_Conditions_Z_codes.

Ammerman, B. A., R. Jacobucci, E. M. Kleiman, L. L. Uyeji, and M. S. McCloskey. 2018. "The Relationship Between Nonsuicidal Self-Injury

Age of Onset and Severity of Self-Harm." *Suicide and Life-threatening Behavior* 48, no. 1: 31–37. https://doi.org/10.1111/sltb.12330.

Andover, M. S., B. W. Morris, A. Wren, and M. E. Bruzzese. 2012. "The Co-occurrence of Nonsuicidal Self-Injury and Attempted Suicide Among Adolescents: Distinguishing Risk Factors and Psychosocial Correlates." *Child and Adolescent Psychiatry and Mental Health* 6, no. 1: 1–7. https://doi.org/10.1186/1753-2000-6-11.

Andover, M. S., J. M. Primack, B. E. Gibb, and C. M. Pepper. 2010. "An Examination of Nonsuicidal Self-Injury in Men: Do Men Differ From Women in Basic NSSI Characteristics?." *Archives of Suicide Research* 14, no. 1: 79–88. https://doi.org/10.1080/13811110903479086.

Aviad-Wilchek, Y., and V. Ne'eman-Haviv. 2017. "The Relation Between a Sense of Meaning in Life and Suicide Potential Among Disadvantaged Adolescent Girl." *International Journal of Offender Therapy and Comparative Criminology* 62, no. 6: 1474–1487. https://doi.org/10.1177/0306624X16684566.

Baños, R. M., L. Desdentado, M. D. Vara, et al. 2023. "How the COVID-19 Pandemic and Its Consequences Affect the Presence of and Search for Meaning of Life: A Longitudinal Study." *Journal of Happiness Studies* 24, no. 1: 17–33. https://doi.org/10.1007/s10902-022-00592-5.

Beck, A. T., A. Weissman, D. Lester, and L. Trexler. 1974. "The Measurement of Pessimism: The Hopelessness Scale." *Journal of Consulting and Clinical Psychology* 42, no. 6: 861–865. https://doi.org/10.1037/h0037562.

Conner, B. T., S. D. Kentopp, M. B. O'Donnell, et al. 2022. "Meaning in Life Moderates Relations Between Personality and Temperament and Nonsuicidal Self-Injury in Hospitalized Adolescents." *Journal of Youth and Adolescence* 51, no. 8: 1622–1635. https://doi.org/10.1007/s10964-022-01615-3.

Crumbaugh, J. C., and L. T. Maholick. 1969. *Manual of Instructions for the Purpose-in-Life-Test*. Munster: Psychometric Affiliates.

De Luca, L., M. Giletta, E. Menesini, and M. J. Prinstein. 2022a. "Reciprocal Associations Between Peer Problems and Nonsuicidal Self-Injury Throughout Adolescence." *Journal of Child Psychology and Psychiatry, and Allied Disciplines* 63, no. 12: 1486–1149. https://doi.org/10.1111/jcpp.13601.

De Luca, L., M. Giletta, A. Nocentini, and E. Menesini. 2022b. "Nonsuicidal Self-Injury in Adolescence: The Role of Pre-existing Vulnerabilities and COVID-19-Related Stress." *Journal of Youth and Adolescence* 51, no. 12: 2383–2395. https://doi.org/10.1007/s10964-022-01669-3.

Deliberto, T. L., and M. K. Nock. 2008. "An Exploratory Study of Correlates, Onset, and Offset of Nonsuicidal Self-Injury." *Archives of Suicide Research* 12, no. 3: 219–231. https://doi.org/10.1080/13811110802101096.

Du, N., Y. Ouyang, Y. Xiao, and Y. Li. 2021. "Psychosocial Factors Associated With Increased Adolescent Nonsuicidal Self-Injury During the COVID-19 Pandemic." *Frontiers in Psychiatry* 12: 743526. https://doi.org/10.3389/fpsyt.2021.743526.

Edwards, M. E., and D. R. Van Tongeren. 2020. "Meaning Mediates the Association Between Suffering and Well-Being." *The Journal of Positive Psychology* 15, no. 6: 722–733. https://doi.org/10.1080/17439760.2019.1651890.

Fegert, J. M., B. Vitiello, P. L. Plener, and V. Clemens. 2020. "Challenges and Burden of the Coronavirus 2019 (COVID-19) Pandemic for Child and Adolescent Mental Health: A Narrative Review to Highlight Clinical and Research Needs in the Acute Phase and the Long Return to Normality." *Child and Adolescent Psychiatry and Mental Health* 14: 20. https://doi.org/10.1186/s13034-020-00329-3.

Frankl, V. E. 2006. *The Unheard Cry for Meaning. Psychotherapy and Humanism*. Boston, MA: Beacon Press.

Gallego, B. 2019. "Risk and Protection Factors of Nonsuicidal Self-Injury in the Spanish Adolescent Population." Unpublished doctoral thesis, Catholic University of Valencia "San Vicente Mártir".

Gandhi, A., K. Luyckx, I. Baetens, et al. 2018. "Age of Onset of Nonsuicidal Self-Injury in Dutch-Speaking Adolescents and Emerging Adults: An Event History Analysis of Pooled Data." *Comprehensive Psychiatry* 80: 170–178. https://doi.org/10.1016/j.comppsych.2017.10.007.

Gandhi, A., K. Luyckx, G. MolenbergHS, et al. 2019. "Maternal and Peer Attachment, Identity Formation, and Nonsuicidal Self-Injury: A Longitudinal Mediation Study." *Child and Adolescent Psychiatry and Mental Health* 13: 7. https://doi.org/10.1186/s13034-019-0267-2.

García-Alandete, J., G. Hernández, B. de Tejada, S. Pérez Rodríguez, and J. H. Marco-Salvador. 2019. "Meaning in Life Among Adolescents: Factorial Invariance of the Purpose in Life Test and Buffering Effect on the Relationship Between Emotional Dysregulation and Hopelessness." *Clinical Psychology & Psychotherapy* 26, no. 1: 24–34. https://doi.org/10.1002/cpp.2327.

García-Alandete, J., E. Rosa, and P. Selles. 2013. "Factorial Structure and Internal Consistency of a Spanish Version of the Purpose-in-Life Test." *Universitas Psychologica* 12, no. 2: 517–530. https://doi.org/10.11144/Javeriana.UPSY12-2.efci.

George, L. S., and C. L. Park. 2017. "The Multidimensional Existential Meaning Scale: A Tripartite Approach to Measuring Meaning in Life." *Journal of Positive Psychology* 12, no. 6: 613–627. https://doi.org/10.1080/17439760.2016.1209546.

Gong, T., Y. Ren, J. Wu, Y. Jiang, W. Hu, and J. You. 2019. "The Associations Among Self-Criticism, Hopelessness, Rumination, and NSSI in Adolescents: A Moderated Mediation Model." *Journal of Adolescence* 72: 1–9. https://doi.org/10.1016/j.adolescence.2019.01.007.

Hasking, P., S. P. Lewis, E. Bloom, A. Brausch, M. Kaess, and K. Robinson. 2021. "Impact of the COVID-19 Pandemic on Students at Elevated Risk of Self-Injury: The Importance of Virtual and Online Resources." *School Psychology International* 42, no. 1: 57–78. https://doi.org/10.1177/0143034320974414.

Hu, Y., Z. Zeng, L. Peng, et al. 2023. "The Effects of the Parent-Child Relationship and Parental Educational Involvement on Adolescent Depression, Self-Injury, and Suicidal Ideation: The Roles of Defeat and Meaning in Life." *Acta Psychologica Sinica* 55, no. 1: 129–141. https://doi.org/10.3724/sp.j.1041.2023.00129.

Humphrey, A., and O. Vari. 2021. "Meaning Matters: Self-Perceived Meaning in Life, Its Predictors and Psychological Stressors Associated With the Covid-19 Pandemic." *Behavioral Science* 11, no. 4. https://doi.org/10.3390/bs11040050.

IBM Statistics. 2019. "IBM SPSS Statistics for Windows, Version 26.0." Armonk, NY: IBM Corp.

Jarvi Steele, S., N. Jaffe, and G. Murray. 2023. "Social Contagion of Nonsuicidal Self-Injury." In *Oxford Handbook of Nonsuicidal Self-Injury*, 830–846. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780197611272.013.42.

Jiang, Y., Y. Ren, J. Zhu, and J. You. 2022. "Gratitude and Hope Relate to Adolescent Nonsuicidal Self-Injury: Mediation Through Self-Compassion and Family and School Experiences." *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues* 41, no. 2: 935–942. https://doi.org/10.1007/s12144-020-00624-4.

Kądziela-Olech, H., G. Zak, B. Kalinowska, A. Wągrocka, G. Perestret, and M. Bielawski. 2015. "The Prevalence of Nonsuicidal Self-Injury (NSSI) Among High School Students in Relation to Age and Sex." *Psychiatry Polska* 49, no. 4: 765–778. https://doi.org/10.12740/psychiatriapolska.pl/online-first/3.

Kaess, M., L. Eppelmann, R. Brunner, et al. 2020. "Life Events Predicting the First Onset of Adolescent Direct Self-Injurious Behavior-A Prospective Multicenter Study." *Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine* 66, no. 2: 195–201. https://doi.org/10.1016/j.jadohealth.2019.08.018.

Klonsky, E. D. 2011. "Nonsuicidal Self-Injury in United States Adults: Prevalence, Sociodemographics, Topography and Functions." *Psychological Medicine* 41, no. 9: 1981–1986. https://doi.org/10.1017/S0033291710002497.

Klonsky, E. D., and C. R. Glenn. 2009. "Assessing the Functions of Nonsuicidal Self-Injury: Psychometric Properties of the Inventory of Statements About Self-Injury (ISAS)." *Journal of Psychopathology and Behavioral Assessment* 31, no. 3: 215–219. https://doi.org/10.1007/s10862-008-9107-z.

Klonsky, E. D., C. R. Glenn, D. M. Styer, T. M. Olino, and J. J. Washburn. 2015. "The Functions of Nonsuicidal Self-Injury: Converging Evidence for a Two-Factor Structure." *Child and Adolescent Psychiatry and Mental Health* 9, no. 1: 44–55. https://doi.org/10.1186/s13034-015-0073-4.

Klonsky, E. D., A. M. May, and C. R. Glenn. 2013. "The Relationship Between Nonsuicidal Self Injury and Attempted Suicide: Converging Evidence From Four Samples." *Journal of Abnormal Psychology* 122, no. 1: 231–237. https://doi.org/10.1037/a0030278.

Kumar, G., D. Pepe, and R. A. Steer. 2004. "Adolescent Psychiatric Inpatients' Self-Reported Reasons for Cutting Themselves." *Journal of Nervous and Mental Disease* 192: 830–836. https://doi.org/10.1097/01.nmd.0000146737.18053.d2.

Lechet, R., and A. Lipziger. 2004. *Meaning: Prevention Program on the Issue of Drugs*. Jerusalem: Ministry of Education, Culture and Sport (Hebrew).

Lim, K. S., C. H. Wong, R. S. McIntyre, et al. 2019. "Global Lifetime and 12-Month Prevalence of Suicidal Behavior, Deliberate Self-Harm and Nonsuicidal Self-Injury in Children and Adolescents Between 1989 and 2018: A Meta-Analysis." *International Journal of Environmental Research and Public Health* 16, no. 22: 4581. https://doi.org/10.3390/ijerph16224581.

Lin, M. P., J. You, Y. Ren, et al. 2017. "Prevalence of Nonsuicidal Self-Injury and Its Risk and Protective Factors Among Adolescents in Taiwan." *Psychiatry Research* 255: 119–127. https://doi.org/10.1016/j.psychres.2017.05.028.

Lloyd-Richardson, E. E., N. Perrine, L. Dierker, and M. L. Kelley. 2007. "Characteristics and Functions of Nonsuicidal Self-Injury in a Community Sample of Adolescents." *Psychological Medicine* 37: 1183–1192.

Macmurray, J. 2012. "Learning to Be Human." *Oxford Review of Education* 38, no. 6: 661–674. https://doi.org/10.1080/03054985.2012.745958.

Marco, J. H., B. Gallego-Hernández de Tejada, V. Guillén, R. M. Baños, and S. Pérez. 2021. "Meaning in Life Buffers the Association Between Perceived Burdensomeness, Thwarted Belongingness, and Frequency of Non-suicidal Self-Injuries in Spanish Adolescents." *Journal of Clinical Medicine* 10, no. 21: 4867. https://doi.org/10.3390/jcm10214867.

Marco, J. H., J. Garcia-Alandete, S. Pérez, et al. 2015. "Meaning in Life and Nonsuicidal Self-Injury: A Follow-Up Study With Participants With Borderline Personality Disorder." *Psychiatry Research* 230, no. 2: 561–566. https://doi.org/10.1016/j.psychres.2015.10.004.

Marco, J. H., S. Pérez, J. García-Alandete, and R. Moliner. 2017. "Meaning in Life in People With Borderline Personality Disorder." *Clinical Psychology & Psychotherapy* 24, no. 1: 162–170. https://doi.org/10.1002/cpp.1991.

Meherali, S., N. Punjani, S. Louie-Poon, et al. 2021. "Mental Health of Children and Adolescents Amidst COVID-19 and Past Pandemics: A Rapid Systematic Review." *International Journal of Environmental Research and Public Health* 18: 3432. https://doi.org/10.3390/ijerph18073432.

Memon, A., S. Sharma, S. Mohite, and S. Jain. 2018. "The Role of Online Social Networking on Deliberate Self-Harm and Suicidality in Adolescents: A Systematized Review of Literature." *Indian Journal of Psychiatry* 60, no. 4: 384–392. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_414_17.

Moloney, F., J. Amini, M. Sinyor, A. Schaffer, K. L. Lanctôt, and R. H. B. Mitchell. 2024. "Sex Differences in the Global Prevalence of Nonsuicidal Self-Injury in Adolescents: A Meta-Analysis." *JAMA Network Open* 7, no. 6: e2415436. https://doi.org/10.1001/jamanetworkopen.2024.15436.

Nock, M. K., E. B. Holmberg, V. I. Photos, and B. D. Michel. 2007. "Self-Injurious Thoughts and Behaviors Interview: Development, Reliability, and Validity in an Adolescent Sample." *Psychological Assessment* 19, no. 3: 309–317. https://doi.org/10.1037/1040-3590.19.3.309.

Obando, D., A. Trujillo, and M. Prada. 2019. "Non-suicidal Self-Injurious Behavior in Adolescents and Its Relationship With Personal and Contextual Factors." *Journal of Psychopathology and Clinical Psychology* 23, no. 3: 189–200. https://doi.org/10.5944/rppc.vol.23.num.3.2018.21278.

Pérez Rodríguez, S., J. H. Marco Salvador, and J. García-Alandete. 2017. "The Role of Hopelessness and Meaning in Life in a Clinical Sample With Nonsuicidal Self-Injury and Suicide Attempts." *Psicothema* 29, no. 3: 323–328. https://doi.org/10.7334/psicothema2016.284.

Pérez, S., J. García-Alandete, M. Cañabate, and J. H. Marco. 2020. "Confirmatory Factor Analysis of the Inventory of Statements About Self-Injury in a Spanish Clinical Sample." *Journal of Clinical Psychology* 76, no. 1: 102–117. https://doi.org/10.1002/jclp.22844.

Pérez, S., M. C. Ros, J. E. L. Folgado, and J. H. Marco. 2019. "Non-suicidal Self-Injury Differentiates Suicide Ideators and Attempters and Predicts Future Suicide Attempts in Patients With Eating Disorders." *Suicide and Life-threatening Behavior* 49, no. 5: 1220–1231. https://doi.org/10.1111/sltb.12521.

Pieh, C., P. L. Plener, T. Probst, R. Dale, and E. Humer. 2021. "Assessment of Mental Health of High School Students During Social Distancing and Remote Schooling During the COVID-19 Pandemic in Austria." *JAMA Network Open* 4, no. 6: e2114866. https://doi.org/10.1001/jamanetworkopen.2021.14866.

Preston, C. C., and A. M. Colman. 2000. "Optimal Number of Response Categories in Rating Scales: Reliability, Validity, Discriminating Power, and Respondent Preferences." *Psychological Act* 104, no. 1: 1–15. https://doi.org/10.1016/S0001-6918(99)00050-5.

Sánchez-Teruel, D., M. A. Robles-Bello, and J. A. Camacho-Conde. 2020. "Validity of the Spanish Version of the Herth Hope Index and the Beck Hopelessness Scale in People Who Have Attempted Suicide." *Actas Españolas de Psiquiatría* 48, no. 4: 163–168.

Schwartz-Mette, R. A., and H. R. Lawrence. 2019. "Peer Socialization of Nonsuicidal Self-Injury in Adolescents' Close Friendships." *Journal of Abnormal Child Psychology* 47, no. 11: 1851–1862. https://doi.org/10.1007/s10802-019-00569-8.

Tang, J., W. Yang, N. I. Ahmed, et al. 2016. "Stressful Life Events as a Predictor for Nonsuicidal Self-Injury in Southern Chinese Adolescence: A Cross-Sectional Study." *Medicine* 95, no. 9: e2637. https://doi.org/10.1097/MD.0000000000002637.

Viñas, F., E. Villar, B. Caparrós, J. Juan, M. Cornellá, and I. Pérez. 2004. "Feelings of Hopelessness in a Spanish University Population: Descriptive Analysis and Its Relationship to Adapting University, Depressive Symptomatology and Suicidal Ideation." *Social Psychiatry and Psychiatric Epidemiology* 39, no. 4: 326–334.

Wang, Y. J., X. Li, C. H. Ng, D. W. Xu, S. Hu, and T. F. Yuan. 2022. "Risk Factors for Nonsuicidal Self-Injury in Adolescents: A Meta Analysis." *eClinical Medicine* 46: 101350. https://doi.org/10.1016/j.eclinm.2022.101350.

Whitlock, J., K. Prussian, and C. Pietrusza. 2015. "Predictors of Self-Injury Cessation and Subsequent Psychological Growth: Results of a Probability Sample Survey of Students in Eight Universities and

Colleges." *Child and Adolescent Psychiatry and Mental Health* 9: 1–12. https://doi.org/10.1186/s13034-015-0048-5.

Wootton, A. R., D. R. Rice, A. L. W. McKowen, and C. Veldhuis. 2022. "A Mixed-Methods and Prospective Approach to Understanding Coping Behaviors, Depression, Hopelessness, and Acute Stress in a U.S. Convenience Sample During the COVID-19 Pandemic." *Health Education & Behavior* 49, no. 2: 219–230. https://doi.org/10.1177/10901981221084272.

Xiao, Q., X. Song, L. Huang, D. Hou, and X. Huang. 2022. "Global Prevalence and Characteristics of Nonsuicidal Self-Injury Between 2010 and 2021 Among a Non-clinical Sample of Adolescents: A Meta-Analysis." *Frontiers in Psychiatry* 13: 912441. https://doi.org/10.3389/fpsyt.2022.912441.

Zelkowitz, R. L., A. C. Porter, E. R. Heiman, and D. A. Cole. 2017. "Social Exposure and Emotion Dysregulation: Main Effects in Relation to Nonsuicidal Self-Injury." *Journal of Adolescence* 60: 94–103. https://doi.org/10.1016/j.adolescence.2017.07.015.

Zetterqvist, M., L. S. Jonsson, Å. Landberg, and C. G. Svedin. 2021. "A Potential Increase in Adolescent Nonsuicidal Self-Injury During Covid-19: A Comparison of Data From Three Different Time Points During 2011-2021." *Psychiatry Research* 305: 114208. https://doi.org/10.1016/j.psychres.2021.114208.