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Research Article

Exploring Peer Factors in South Korean Youths' Reactions to Non-Suicidal Self-Injury

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Abstract: Youths across cultures show an alarming prevalence of non-suicidal self-injury (NSSI). This study explored the effects of perceived peer popularity and relationship closeness on the reactions of youths with no NSSI history to peers engaging in NSSI. Two hundred and eighty young Koreans (mean age = 17.06) were asked about how they would respond to four hypothetical self-injuring characters. The results revealed that the participants evaluated unpopular peers and their NSSI more favorably, but were more willing to personally provide help to peers they were closer with, regardless of popularity. For close friends, the participants were more willing to provide emotional help than behavioral help, and their own unstable psychological conditions were associated with agreeable evaluations about NSSI. This paper provides suggestions for school counselors concerning youths' social experiences and mental health.

Keywords: non-suicidal self-injury, peer relationship, self-injury, social reactions, youth mental health

1. Introduction

Non-suicidal self-injury (NSSI) refers to a deliberate harming of one's body without suicidal intent or for not socially sanctioned purposes (Klonsky, 2007; Nixon et al., 2008). Previous research on non-clinical populations suggested that NSSI is most prevalent among young people across cultures, affecting 17.2% of adolescents and 13.4% of college-aged adults as found by Swannell et al. (2014) via a meta-analysis of 119 empirical records. NSSI is also problematic because it can give rise to psychiatric symptoms, intra- and interpersonal malfunctioning, and suicidality (Jacobson & Batejan, 2014); therefore, its early onset can have pervasive outcomes for young people regarding their psychological health and career development (Heath et al., 2008).

Given that NSSI during adolescence can result in various negative outcomes, this study explored how perceived peer popularity and relationship closeness are associated with adolescents' reactions to peers presenting NSSI in young South Koreans. Specifically, this study was interested in testing the effects of peer popularity and relationship closeness independently and together (in case an interaction existed) on the formation of young Koreans' reactions to NSSI. Approximately one-quarter of young South Koreans reported having had an NSSI experience (Ham et al., 2021; Lee et al., 2016), which is higher than the 17.2% pooled prevalence found predominantly among Western populations (Swannell et al., 2014). The alarming prevalence expedited research, but the majority of studies on Korean youths remain focused on exploring intrapersonal contributors like neurotic personality and low tolerance to stress (Kim, 2017). Little attention is given to interpersonal aspects despite their necessity for youth counseling and psychoeducation practice (Jeong &

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Kim, 2021).

Previous studies highlighted several risk factors for NSSI, such as high levels of affect intensity and emotion dysregulation, and early life traumas like abuse (Fox et al., 2015; Ham et al., 2021). In addition, interpersonal relationships have also been reported to have a significant influence on a person's NSSI (Jacobson & Batejan, 2014). Interpersonal experiences, such as social rejection or bullying, can trigger NSSI (Hilt et al., 2008), and other people's reactions following NSSI can contribute to the person's future NSSI episodes (Jacobson & Batejan, 2014; Nock & Prinstein, 2004). Accordingly, individuals around a person who self-injures are advised not to unconditionally give benevolent reactions like sympathizing with the person's self-destructive thoughts to cautiously prevent reinforcing NSSI (Nock & Prinstein, 2004). Avoidant and rejecting reactions are also discouraged, as they can exacerbate the person's sense of shame (Gayfer et al., 2020). Given that interpersonal reactions can result in different influences over NSSI depending on an individual's type of reaction and relationship with the self-injuring person, some researchers like Muehlenkamp et al. (2013) have attempted to measure the reactions of others to self-injuring people, such as doctors and healthcare staff. Still, it is difficult to ascertain how the general public would react to NSSI.

One factor that warrants consideration is that a person who self-injures and the people around that person affect each other reciprocally (Lewis et al., 2012; Park et al., 2021). The most representative case can be found among adolescent peers (Prinstein et al., 2010; Simone & Hamza, 2020). The ideas adolescents may learn from their self-injuring friends are often dysfunctional, such as that NSSI can help them soothe negative emotions (Siddaway et al., 2019). Despite the danger, such ideas can sometimes elicit positive impressions of NSSI (Jarvi et al., 2013; Prinstein et al., 2010). However, peer influence is under-explored for practical reasons, such as the population's tendency to conceal their NSSI and ethical concerns (Simone & Hamza, 2020). In their seminal review, Heilbron and Prinstein (2008) emphasized the hazardous effects of NSSI among adolescent peers, while interdisciplinary researchers like Lewis et al. (2012) warned that the risks were growing due to online peer-to-peer exchange of NSSI information. However, little is known about the factors related to the magnitude of influence adolescents receive from peers engaging in NSSI.

Studies of the youth's characteristics suggested that peer popularity and relationship closeness can affect the experience one has with peers (Heilbron & Prinstein, 2008; Jarvi et al., 2013; You et al., 2013). As can be inferred from the social cognitive theory applied in NSSI research by Hasking and Rose (2016) and peer deviancy training developed by Granic and Dishion (2003), young people tend to evaluate popular peers' behavior more favorably than that of less popular peers, even when the behavior is socially problematic (e.g., obsessive dieting). Although the influence is not limited to negative behaviors (Karakos, 2014), NSSI could be seen as more positive when an admirable, self-injuring peer is present (Brown et al., 2008; Jarvi et al., 2013).

Relationship closeness also relates to the degree of peer influence (Hasking & Rose, 2016; Kim & Lee, 2020). In general, adolescents and young adults tend to fear and avoid NSSI (Lloyd et al., 2018; Park et al., 2021). However, in regards to their close friends' NSSI, studies like Brown et al. (2008) found that young people can feel responsible and experience co-dependent negative thoughts due to NSSI. Young people reported heightened sympathetic concerns and responsibility for conserving friendship even at the expense of their stress (Gayfer et al., 2020; Prinstein et al., 2010). Adolescents tend to hesitate to consult with other adults, including school counselors, about close friends' NSSI and support those friends by comforting them and listening to their descriptions of NSSI-triggering events (Gayfer et al., 2020). Peer help provision frequently lacks behavioral intervention, such as bringing friends to treatment centers (Gayfer et al., 2020; Simone & Hamza, 2020).

Meanwhile, frequent exposure to friends' NSSI through either direct observation or descriptions can reduce young people's threshold against engaging in NSSI themselves (Jarvi et al., 2013; Prinstein et al., 2010). Therefore, regarding individual differences and participant characteristics, it is speculated that peer influence could pose greater risks to adolescents with psychological vulnerabilities to distress (Gayfer et al., 2020; Simone & Hamza, 2020). Participants' gender was also frequently referred to (Park et al., 2021; Simone & Hamza, 2020); however, it is hard to be certain that females would receive greater influence from self-injuring friends than males since NSSI studies had predominantly female samples (e.g., Fisher et al., 2017), thus lacking evidence from direct comparisons of female and male reactions (Laye-Gindhu & Schonert-Reichl, 2005). In addition, researchers like Corrigan and Watson (2002) proposed that having personal knowledge about NSSI, such as knowing someone who self-injures in participants' real lives, could shift their reactions to the favorable side. To date, the roles of these participant variables are largely unknown and still new for discussion (Lloyd et al., 2018; Park et al., 2021). The current level of understanding of adolescents' reactions to their

peers' NSSI requires a focused exploration of its contributing factors.

To focus on interpersonal factors and examine whether different levels of peer popularity and relationship closeness would relate to differentiable reactions from Korean adolescents, case vignettes were presented to study participants without NSSI history to prevent their personal experience from confounding their response (Gayfer et al., 2020). Since the literature on this topic has recently matured, we did not presume an a priori hypothesis but instead attempted to address exploratory research questions stemming from the speculations and discussions of previous studies. This study was approved by the Institutional Review Board, with which the authors are affiliated. The research questions are as follows:

i. Does peer popularity have an influence on adolescents' reactions to NSSI?
ii. Does relationship closeness have an influence on adolescents' reactions to NSSI?
iii. Does the degree of willingness differ depending on the types of help that the participants were asked to provide for close friends engaged in NSSI?
iv. Do participants' characteristics (gender, psychological condition, whether they have ever known a person who self-injures in real life) relate to their reactions to NSSI?

2. Method

2.1 *Participants*

Data from 280 participants were included in the analysis (ages: M = 17.06, SD = 3.28, 150 females and 130 males) after removing careless responses case-wise (answered '1111' across measures). Among the participants, 41.75% were middle school students, 47.09% were high school students, and the remainder reported they were not in school at the time of this study. Most of the participants did not have religious affiliations (73.57%), and 29.64% knew at least one person who self-injured in real life. The sample size was sufficient for finding effect sizes as small as .10 at .05 significance level (α) when power (1 - β) is .80.

2.2 *Measures*

2.2.1 *Indicators of the reactions to NSSI*

Six items were generated to measure the participants' cognitive, emotional, and behavioral reactions to self-injuring peer characters based on a rigorous literature review. Five items used a 7-point scale including a) an emotional *evaluation* of the peers' NSSI (1 = 'completely negative', 7 = 'completely positive'); b) sympathetic *agreeability* to trying out NSSI (like the peer character does) in times of stress (1 = 'completely disagree', 7 = 'completely agree'); c) perceived *genuineness* of the peers' psychological pain (1 = 'completely ingenuine', 7 = 'completely genuine'); d) willingness to provide *emotional* help (e.g., comforting the peer by talking or patting, 1 = 'completely unwilling', 7 = 'completely willing'); and e) willingness to provide behavioral help (e.g., taking the peer to hospital or counseling center, 1 = 'completely unwilling', 7 = 'completely willing'). Lastly, participants were asked to choose the most probable action they would take if they spotted the self-injuring character sitting alone at a park's bench, among options 1 to 3 (1 = 'I would start a conversation with [A/B/C/D],' 2 = 'I would respond to [A/B/C/D] only if A started a conversation with me,' 3 = 'I would not give any attention to A and walk away'). These options were adapted from the "helping scenario", posited by Nielsen and Townsend (2018, p. 485) and used to assess young people's spontaneous reactions to self-injury. Responses to this item were reverse coded and adjusted to the 7-point system for interpretability, with higher scores indicating higher endorsement of favorable (helping) reactions towards the peer's character (Nielsen & Townsend, 2018). The internal consistency estimates of Cronbach's α were .71 for items 1-3 which can explain participants' evaluation of the peers' NSSI and .79 for items 4-6 in regards to the attitude and response that participants felt willing to show to the self-injuring peer characters.

2.2.2 *Psychological condition*

The Korean version of Brief Symptom Inventory-18 (BSI-18; Derogatis & Melisaratos, 1983) was used to assess the participants' psychological condition during the preceding week on a 5-point scale ranging from 0 ('not at all') to 4

('extremely'). The global severity index (GSI) was the sum of the scores across three factors: somatization, depression, and anxiety. Higher GSIs indicated higher psychological vulnerability to distress. The internal consistency estimates of Cronbach's α were .74 for somatization, .84 for depression, and .79 for anxiety in the initial validation with a Korean college sample (Park et al., 2012), and .81, .86, .88, respectively, and .94 for GSI in the present study.

2.3 *Procedures*

2.3.1 *Data collection*

The participants were recruited on the internet via a research agency (DataSpring, https://ko.d8aspring.com) that has representative worldwide panels, including Koreans who had submitted consent for invitations to studies upon registration with the panel group. For participation in the current study, informed consent was obtained from the participants, their parents, and legal guardians by digital signatures submitted after reviewing information about this study, including participants' rights.

2.3.2 *Self-injuring peers' case vignettes*

As a means to trigger participants' reactions during online surveys, participants were presented with four case vignettes written in the first-person perspective so the participants could imagine how they would react in the given situation. Each vignette was created to describe a self-injuring peer character with different interpersonal characteristics (high or low levels of peer popularity and relationship closeness, as explained in Table 1).

Table 1. The 2x2 vignette conditions

Condition	Peer popularity of the character	Closeness of the character's relationship to the participant
A	High	High
B	High	Low
C	Low	High
D	Low	Low

Aside from the two interpersonal conditions manipulated in vignettes to seek answers to the research questions of this study, characteristics were reserved to be the same across characters named A to D. No reference to psychiatric diagnoses or motivations for NSSI was included to prevent giving nuanced information to the participants (e.g., the character tries to seek attention) as recommended by Nielsen and Townsend (2018). The vignettes were given in Korean and in a random order per participant. The English translation, with the information in brackets included as appropriate, is presented below:

> [A/B/C/D] is the same age and sex as me and is [very popular/not at all popular] among our peers. I am a [very close/not at all close] to [A/B/C/D] and found out that they deliberately hurt themselves by cutting their arm with a knife, but not to kill themselves, when they feel very stressed out.

A set of six questions (see Section 2.2 Measures) was asked per vignette, and the study participants' psychological condition was evaluated.

2.3.3 *Data Analysis*

From 280 participants, 1,120 cases of reactions to the self-injuring peer characters were analyzed. Before analyzing the reactions, factor structures were checked for the 6-item indicators of the reactions to NSSI (hereafter, the reaction indicators) that were designed for this study via exploratory factor analysis using the maximum likelihood estimation with oblique rotation (Direct Oblimin). The reaction indicators were reliably grouped into two factors named Evaluation of peers' NSSI (items 1-3) and Attitude and response toward peer self-injurer (items 4-6).

To examine the participants' reactions depending on peers' characteristics (research questions 1 and 2), descriptive

statistics were reviewed (correlations between variables can be found in Table 2 as supplementary material), and statistical assumptions for the analysis of variance (ANOVA) were checked. Distributions of the residuals of the dependent variables — namely, Evaluation of peers' NSSI and Attitude and response towards peer self-injurer were slightly skewed (and significant according to Shapiro-Wilk test). However, since the distributions were bell-curved and after reviewing Q-Q plots, no arbitrary data transformations were made to conserve the natural characteristics of this sample of young South Koreans with no NSSI history (see Lloyd et al., 2018). Still, the alpha level for significance testing was adjusted by dividing the conventional alpha level .05 by the number of statistical tests being performed (i.e., Bonferroni correction) on the Attitude and response towards peer self-injurer due to its violation of homoscedasticity to avoid Type I errors (Miller, 1981). A series of two-way between-groups ANOVAs was conducted to test and compare the main effects that peer popularity and relationship closeness had on participants' reactions.

To answer research question 3, a paired sample *t*-test was conducted to compare the degrees of willingness to provide emotional (response to item 4 of the reaction indicators) and behavioral (response to item 5 of the reaction indicators) forms of help for the self-injuring peers. Finally, to answer research question 4, a series of three-way between-groups ANOVAs was performed to examine the effects of participants' characteristics on their reactions to NSSI. Regarding the participants' psychological condition, continuous GSI scores (BSI-18 total scores, representing overall psychological vulnerabilities to distress) were revised into categories, using arbitrary thresholds. Previous studies on the validity of the BSI-18 case rules (Derogatis & Melisaratos, 1983; Recklitis et al., 2017) suggested that different thresholds or cut-off scores can be used depending on the research context and the sample's characteristics. For the present non-clinical sample, comparative GSI thresholds were applied depending on the participants' average GSI score (M = 13.91, SD = 13.03), consisting of level 1 for scores ≤ 13.91, level 2 for scores > 13.91 to < 26.93, level 3 for scores ≥ 26.94 to < 39.96, and level 4 for scores ≥ 39.97 (which 5.71% of the study participants were classified as). Higher levels indicated higher vulnerability to distress. The Games-Howell post hoc test was used between the four levels. All analyses were conducted using SPSS version 25.

3. Results

3.1 *Does peer popularity have an influence on adolescents' reactions to NSSI?*

The self-injuring characters' popularity among peers was shown to have a significant main effect on the Evaluation of peers' NSSI factor of the reaction indicators, $F(1, 1115) = 7.86$, $p = .01$, $\eta^2 = .01$. Participants' average evaluation about characters and their NSSI was significantly more positive when the characters were not popular (M = 3.21, SD = 1.31) than when they were popular (M = 3.00, SD = 1.26). However, peer popularity did not have a significant main effect on the participants' Attitude and response towards peer self-injurer factor, $F(1, 1115) = .09$, $p = .76$, neither an interaction with the relationship closeness.

3.2 *Does relationship closeness have an influence on adolescents' reactions to NSSI?*

The closeness of the relationship between participants and characters (as prescribed in vignettes) had a significant main effect on the Attitude and response towards peer self-injurer factor of the reaction indicators, $F(1, 1115) = 217.59$, $p < .001$, $\eta^2 = .16$. The participants showed a more approaching attitude on average and expressed greater willingness to provide help to characters who were close friends (M = 5.99, SD = 1.01) than those who were not (M = 4.82, SD = 1.34). However, the relationship closeness did not have a significant main effect on the participants' Evaluation of the peers' NSSI factor, $F(1, 1115) = 1.44$, $p = .23$, and no interaction with the peer popularity was observed.

3.3 *Does the degree of willingness differ depending on the types of help?*

Participants' responses to items 4 and 5 of the reaction indicators were compared. In the results, there was a significant difference between the willingness to provide personal help for the characters with high relationship closeness depending on the forms of help, t (559) = 5.89, $p < .001$. Although 21.2% of the variance in the participants' Attitude and response towards peer self-injurer factor was attributable to the relationship closeness, they were more willing to provide emotional help (e.g., comforting the peer by talking or patting, M = 5.93, SD = 1.11) than the

behavioral form of help (e.g., taking the peer to hospital or counseling center, $M = 5.65$, $SD = 1.30$).

3.4 *Do participants' characteristics relate to their reactions to NSSI?*

The three-way ANOVA results showed the effects of the participants' characteristics on their reactions to the self-injuring characters. First, the participants' gender had a significant main effect on the Evaluation of peers' NSSI factor of the reaction indicators, $F(1, 1111) = 26.49$, $p < .001$, $\eta^2 = .02$; but not on the Attitude and response towards peer self-injurer factor, $p = .11$. Females on average made more positive evaluations of the characters ($M = 3.31$, $SD = 1.28$) than males ($M = 2.87$, $SD = 1.26$).

Second, the participants' unstable psychological condition had a significant main effect on the Evaluation factor, $F(3, 1103) = 68.82$, $p < .001$, $\eta^2 = .16$; but not on the Attitude and response factor, $p = .79$. When the GSI levels were compared through a post hoc test, the most unstable and distressed level 4 participants evaluated the self-injuring characters and their NSSI behavior significantly more positively than those with lower levels of distress. This difference was significant at $p < .001$ between level 1 ($n = 177$, $M = 2.74$, $SD = 1.16$) and level 4 participants ($n = 16$, $M = 4.16$, $SD = 1.57$).

Third, whether the participants knew someone engaged in NSSI was significantly related to the Evaluation factor, $F(1, 1111) = 13.47$, $p < .001$, $\eta^2 = .01$; but not to the Attitude and response factor, $p = .88$. The participants who had the acquaintances with NSSI experience made more positive evaluations ($n = 83$, $M = 3.38$, $SD = 1.39$) than those who did not have such acquaintances ($n = 197$, $M = 2.99$, $SD = 1.23$). Among these characteristics, the participants' psychological condition explained 15.8% of the variance in the Evaluation of peers' NSSI factor, which was the second-largest effect after the self-injuring characters' peer popularity.

4. Discussion

In this study, we explored the influence of perceived peer popularity and relationship closeness on adolescents' reactions to peers presenting NSSI. Peer popularity was found to be related to the participants' evaluations of peer characters and their NSSI behaviors, but in an unexpected way. The participants' tendency to make more favorable evaluations of unpopular self-injuring peers contradicted a common speculation addressed in previous studies (e.g., Hasking & Rose, 2016) that popular characters would more easily elicit positive impressions from peers because of the admiration others have for them.

Another way to interpret this finding is the stigma and biases that general people conform to when they have little knowledge about NSSI and its underlying reasons, such as self-punishment and emotion regulation (Nock & Prinstein, 2004). Consistently with the results of Nielsen and Townsend (2018) and Lloyd et al. (2018), the general population tends to presume social motivations behind one's NSSI, such as seeking attention or avoiding responsibility. Although the vignettes used in this study did not specify any motivations, there is a possibility that the participants supposed that popular characters who self-injure would pursue these social objectives, as in the case of Lloyd et al. (2018) where young participants assumed social motivations and showed more rejecting reactions to characters who did not try hard enough to hide their NSSI scars.

Our participants made more favorable evaluations of unpopular peers who self-injure; however, it did not direct them to take *action* for them. Instead, their willingness to personally provide help related to the closeness of the relationship participants perceived with their peers, a result that was consistent with qualitative studies (Fisher et al., 2017; Gayfer et al., 2020). Specifically, the participants were more inclined to provide emotional help rather than behavioral help. The difference regarding the forms of help was also consistent with previous research on help-seeking for NSSI by Simone and Hamza (2020) and an investigation by Gayfer et al. (2020), which showed that less than 20% of young people attempted and even fewer of them succeeded in providing behavioral help, such as making referrals to school counselors.

The participants' characteristics related to their evaluations. Specifically, females tended to evaluate peers who self-injure more favorably than males. Having known a self-injuring person in one's real life also made the evaluation more positive, which is consistent with Park et al.'s (2021) finding that personal acquaintance can mitigate the NSSI stigma. However, the participants' psychological conditions showed the greatest influence on having positive evaluations of

NSSI. These results agree with Gayfer et al. (2020) and Hasking et al. (2015), who found that young participants were more open and felt connected to peers' distress when they were experiencing their own psychological struggles.

The present findings about young people's evaluations and their willingness to provide emotional and behavioral forms of help can inform school counselors that there can be a disparity between youths' empathic ability and helping behaviors. Increasing awareness and knowledge about NSSI through conventional psycho-education may not be sufficient for the development of an inclusive environment for young people engaging in NSSI. Programs through which young people can earn an accurate understanding of NSSI would benefit the most *if* accompanied by behavioral protocols sufficiently specific for them to effectively react to NSSI when presented by their peers. Previous studies noted that self-injuring adolescents and young adults most frequently chose their peer friends to self-disclose, but little practical help was received in return. Hence, despite feeling heavy from emotionally supporting their friends (Hasking et al., 2015), young people tend to hesitate to consult with responsible adults like school counselors (Simone & Hamza, 2020).

Necessary steps and measures to react properly to peers' NSSI can be educated to youths to ensure that they are well aware of this topic, alleviate risks of developing maladaptive codependency with the peer who self-injures, and ultimately engage the youths on the road to self-care (Prinstein et al., 2010; You et al., 2013). The programs delivered in schools should be done with careful consideration, as, although young people with unstable psychological conditions may feel empathetic and cooperatively respond to programs, they may experience more distress when they befriend their peers who self-injure. Accounting for the peers' influence, it is important for studies and interventions of NSSI because responsible adults are frequently the last people to know about young people's NSSI and its severity (Muehlenkamp et al., 2013; Park et al., 2021; Simone & Hamza, 2020).

4.1 *Limitations and suggestions for future studies*

Although this study explored an understudied topic in NSSI literature by examining adolescents' reactions to peers who self-injure, our study has the following three limitations. The first limitation is that the results should be cautiously interpreted in the context of South Korean culture and social display rules. While adolescents in individualistic cultures might indeed evaluate popular characters' NSSI behavior more favorably than that of unpopular characters in South Korea, attention-seeking is socially discouraged. A cross-cultural examination is needed to gain the generalizability of these results. The second limitation is that the indicators used to evaluate the participants' reactions lacked conventional psychoanalytic steps. Despite our systematic and rigorous literature review, these indicators should be validated if they are to be used in future studies. The third limitation is that case vignettes were used to present different types of characters in a way to minimize potential harm to the study participants. Accordingly, the results may not accurately reflect reality. Future studies could use traditional methods such as structured observations or case studies of dyads or groups of young people. Similarly, laboratory manipulation is also encouraged to make a causal inference regarding peer factors.

4.2 *Conclusion*

This study attempted to address questions raised by youths' NSSI literature with a clear emphasis on peer relationship factors. A common social learning perspective might assume that popular self-injurers would easily earn more support; however, the present finding contradicted the speculation. Further investigation is needed to find out whether the result is attributable to conservative Korean culture or a stigma about the motivations of NSSI. The overall results highlighted the importance of providing young, psychologically healthy people with resources and opportunities to simulate or practice how to best respond to their self-injuring peers who are in need of behavior-level help, such as referring them to a professional.

Conflict of interest

The authors declare no competing financial interest.

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