· 综述 ·

青少年非自杀性自伤行为与反刍思维相关性的研究进展

金茜 尹斐 朱婉 李梦甜 葛菲 曹建琴
150081 哈尔滨医科大学护理学院
通信作者：曹建琴，Email：cjq338@163.com
DOI：10.3969/j.issn.1009-6574.2023.10.008

【摘要】 非自杀性自伤(NSSI)是自杀意念和自杀行为的重要预测因素，其在全球青少年中的患病率呈逐渐上升趋势，成为青少年常见的公共卫生问题之一。反刍思维作为一种认知过程和情绪调节策略，与NSSI密切相关，高水平的反刍思维易诱发NSSI。本文从青少年NSSI和反刍思维的相关理论、反刍思维对青少年产生的影响及相关干预措施进行综述，旨在为早期发现青少年NSSI并进行针对性的干预提供方向。

【关键词】 青少年； 非自杀性自伤； 反刍思维； 综述

基金项目： 国家自然科学基金(72204065)；黑龙江省自然科学基金(LH2020H030)；黑龙江省哲学社会科学研究规划项目(19EDB091)

Research progress in rumination in adolescents with non-suicidal self-injury behaviors

Jin Xi, Yin Fei, Zhu Wan, Li Mengtian, Ge Fei, Cao Jianqin
School of Nursing, Harbin Medical University, Harbin 150081, China
Corresponding author: Cao Jianqin, Email: cjq338@163.com

【**Abstract**】 Non-suicidal self-injury (NSSI) is an important predictor of suicidal thoughts and behaviors. The prevalence of NSSI in the global youth population is gradually increasing, and it is one of the common public health problems among adolescents. As a cognitive process and emotional regulation strategy, rumination is closely related to NSSI. High-level rumination can easily induce NSSI. This paper summarizes the related theories of adolescent NSSI and rumination, the influence of rumination on adolescents and intervention

[28] Higuchi M, Tokuno S, Nakamura M, et al. Classification of bipolar disorder, major depressive disorder, and healthy state using voice[J]. Asian Journal of Pharmaceutical and Clinical Research, 2018, 11(3): 89-93. DOI: 10.22159/ajpcr.2018.v11s3.30042.

[29] Weiner L, Guidi A, Doignon-Camus N, et al. Vocal features obtained through automated methods in verbal fluency tasks can aid the identification of mixed episodes in bipolar disorder[J]. Transl Psychiatry, 2021, 11(1): 415. DOI: 10.1038/s41398-021-01535-z.

[30] Weintraub MJ, Posta F, Arevian AC, et al. Using machine learning analyses of speech to classify levels of expressed emotion in parents of youth with mood disorders[J]. J Psychiatr Res, 2021, 136: 39-46. DOI: 10.1016/j.jpsychires.2021.01.019.

[31] Pan Z, Gui C, Zhang J, et al. Detecting manic state of bipolar disorder based on support vector machine and gaussian mixture model using spontaneous speech[J]. Psychiatry Investig, 2018, 15(7): 695-700. DOI: 10.30773/pi.2017.12.15.

[32] Birnbaum ML, Abrami A, Heisig S, et al. Acoustic and facial features from clinical interviews for machine learning-based psychiatric diagnosis: algorithm development[J]. JMIR Ment Health, 2022, 9(1): e24699. DOI: 10.2196/24699.

[33] Mohammadi HS, Saeidi R. Speaker identification performance enhancement using Gaussian mixture model with GMM classification post-processor[C]// Proceedings of the 2007 IEEE International Conference on Signal Processing and Communications. New York: IEEE, 2007. DOI: 10.1109/ICSPC.2007.4728366.

[34] Fu L, Mao X, Chen L. Speaker independent emotion recognition based on SVM/HMMs fusion system[C]// Proceedings of the 2008 International Conference on Audio, Language and Image Processing. New York: IEEE, 2008. DOI: 10.1109/ICALIP.2008.4590144.

(收稿日期：2023-03-27)
(本文编辑：赵金鑫)

measures, to provide direction for early detection of adolescent NSSI and targeted intervention.

【Key words】 Adolescent; Non-suicidal self-injury; Rumination; Review

Fund programs: National Natural Science Foundation of China (72204065); Natural Science Foundation of Heilongjiang (LH2020H030); Philosophy and Social Science Research and Planning Project of Heilongjiang Province (19EDB091)

非自杀性自伤(non-suicidal self-injury, NSSI)是指在没有自杀意图或社会认可的目的下故意破坏身体组织,包括切割皮肤、灼烧、严重的皮肤抓伤和撞击坚硬物体等行为[1-2]。NSSI已经成为全球青少年中较为普遍的公共卫生问题。Meta分析显示,全球青少年NSSI患病率约为22.1%,我国中学生的NSSI患病率约为22.37%[3-4]。NSSI与抑郁、焦虑、双相障碍和边缘性人格障碍等精神心理问题密切相关[5-6]。NSSI不仅会损害青少年的心理健康,增加自杀意念和自杀行为,还会造成感染、瘢痕等躯体伤害[6-7]。同时,由于NSSI导致的情绪失调还会造成一系列适应不良的行为,包括暴食、酒精成瘾和攻击性行为等[8-9]。因其具有高患病率、高复发率和成瘾的特点,故识别NSSI的影响因素并制订有效的干预措施尤为重要[10-11]。当前的研究聚焦在负面情绪与NSSI之间的关联和作用机制,其中反刍思维(rumination)受到广泛关注[12]。

反刍思维是指当人面对自己痛苦和担忧的经历时,会不断地进行被动且重复的负面思考,使个体深陷消极情绪中无法自拔[13]。Nolen-Hoeksema等[14]认为,反刍思维是一种适应不良的思维方式,促使个体将注意力聚焦于负面情绪,对思维和认知造成严重影响。这种适应不良的思维方式阻碍了个体解决问题和使用适应性应对技能的能力,因此反刍思维与NSSI、双相障碍和PTSD等精神心理疾病密切相关[15-17]。在反应风格理论中,反刍思维被认为是一种无效的情绪调节策略[14]。该理论认为,高反刍思维的个体在经历负面情绪时,无法选择适应性策略调节情绪,会造成负面情绪的累积,所以个体可能选择一些快速且有效的应对方法,如NSSI[14]。

NSSI与反刍思维存在相关性。Meta分析显示,反刍思维与NSSI呈正相关,并对NSSI的参与频率有影响[18],国内的研究与其结果相同[19-21]。另一项Meta分析显示,反刍思维是NSSI的危险因素之一[12]。此外,对NSSI的前瞻性预测发现反刍思维可能会加剧NSSI的风险[22]。基于此,本文对国内外NSSI和反刍思维的相关研究进行综述,探讨反刍思维对NSSI的作用及相关研究现状,旨在为未来的研究及认知情绪干预提供方向。

一、NSSI与反刍思维的相关理论

1.情绪级联模型(emotional cascade model):该理论被广泛地用于解释NSSI与反刍思维之间的关系[23-24],其认为情绪和行为的关系失调是由认知过程的改变导致的。调节情绪和改变不良行为的能力是由认知过程所决定[23-24],即反刍思维和消极情绪间存在正反馈循环,反刍思维将注意力分配到负性刺激,增加消极情绪的强度和持续时间,而消极情绪的加剧会增加反刍思维,两者同时互相强化并形成了恶性且重复的循环,最终形成了“情绪级联”[24-25]。当“情绪级联”加剧时,个体会处于一种自我厌恶的痛苦中,在高反刍思维的状态下,适应性情绪调节策略可能无法中断这种恶性循环;而NSSI作为一种“分心”形式,将对反刍思维和消极情绪的注意力转移到身体疼痛和鲜血刺激方面[24-25]。相关研究表明,ECM是一个中介模型,反刍思维是消极情绪与NSSI间的中介变量[26]。因此,反刍思维对NSSI的发生和维持起着重要的作用。但NSSI只能暂时中断“情绪级联”,在短期内缓解消极情绪对个体的影响,一旦伤口愈合或“情绪级联”加剧,个体又会不断重复NSSI[27]。正是由于NSSI未能对反刍思维的长期变化造成影响,并且在消极情绪的不断强化与冲击下,最终造成高反刍思维的个体不断重复NSSI。部分研究以情绪级联模型为框架,观察到反刍思维与消极情绪互相激化会促使NSSI的发生,个体在进行NSSI后负性情绪体验随之降低,并且与非疼痛刺激的情绪调节策略相比,有疼痛刺激的NSSI能减轻个体在反刍过程中造成的负面影响[28-30]。该理论揭示了NSSI与反刍思维不断强化并持续发展的过程。基于该理论,在临床中可以采取转移注意或表达性写作等干预方法,将注意力聚焦在积极情绪方面,中断反刍思维所造成的负性“情绪级联”,进而避免青少年发生NSSI。

2. NSSI的认知情绪模型(cognitive emotional model of NSSI, CEM NSSI):NSSI被认为是一种情绪调节功能,并且情绪反应的稳定性和稳定程度是NSSI发展和维持的重要因素之一[31-33]。另有研究

表明，NSSI与认知过程密切相关，即参与NSSI个体的消极反刍思维更高[34-35]。相关研究基于社会认知理论将认知模型和情绪调节模型结合，开发出CEM NSSI[35-36]。该模型认为情绪反应和认知过程是NSSI发生和发展的核心，反刍思维在认知过程中起着重要作用[36]。当个体遇到外部的负性刺激时，情绪反应和认知相互作用将注意力分配于负性刺激，导致积极的情绪反应和认知回应的能力下降，并增加了个体的消极情绪[36]。反刍思维作为一种负性认知方式会降低个体的认知能力，增加个体的消极自我认知，放大归因于负性刺激所产生的消极情绪并加剧个体的心理痛苦，导致个体选择NSSI作为回避策略以减少或停止对负性刺激的优先关注[37-38]。该模型不仅适用于在纵向研究中推测NSSI患者群体认知和情绪调节策略随着时间推移而变化的趋势，还可用于预测NSSI的发生和持续状态[36]。Dawkins等[39]对该模型进行测试和验证发现，其为结合认知与情绪调节的预防和干预措施的开发提供了理论基础。该模型总结了在NSSI发生过程中，反刍思维作为一种负性认知方式与情绪调节间的相互作用。基于该模型，在临床中可以采取认知重评等干预方法，通过注意训练、行为训练等方式促使个体改变原有的负性认知模式，减少由消极反刍思维所导致的NSSI，发展解决实际问题的能力，增强积极情绪。

二、反刍思维对NSSI的作用

目前，随着情绪级联模型和CEM NSSI的相继提出，越来越多的研究者将NSSI融合到更广泛的认知和情绪网络中，而反刍思维作为一种认知方式，与NSSI的结合更加紧密。因此，探究反刍思维对NSSI的作用并采取针对性的干预方法是较为重要的。

1.反刍思维对NSSI的预测作用：部分研究表明，反刍思维可以预测NSSI[40-43]。Burke等[40]通过探索认知情绪调节策略了解青少年的情感功能特征，结果表明存在反刍思维的青少年可能在一年内发生NSSI，并且高反刍思维个体会增加NSSI的频率和风险。Barrocas等[41]对青少年群体NSSI的总体纵向过程和潜在轨迹进行了研究，发现反刍思维是导致青少年NSSI的危险因素之一。Selby等[24-25]以情绪级联模型为框架，探究并证实了反刍思维与消极情绪相互作用并显著预测NSSI。Nicolai等[22]和Gromatsky等[42]将反刍思维作为NSSI的前瞻性预测因子进行了研究，发现反刍思维可以预测NSSI的风险指数，即具有负面情绪的个体更易处于NSSI的风险中，并且反刍思维作为一种负性的认知情绪调节策略加剧了负面情绪对个体的影响，导致其选择更极端的情绪调节策略，因此增加了NSSI的可能性。Hughes等[43]利用生态瞬时评估测量青少年NSSI的认知和情感预测因子及其交互过程，发现包括反刍思维在内的认知和情感因素不仅具有独立的主效应，而且相互作用并预测NSSI个体的思想和行为。因此，在临床中应重视消极反刍思维较高的青少年群体，及早对其进行针对性干预，防止其发生NSSI。

2.反刍思维对NSSI的调节作用：在情绪级联模型中，情绪不仅是核心维度，还与NSSI密切相关。反刍思维作为情绪的“催化剂”，会加强两者的关联，并在情绪与NSSI间起调节作用[23, 44]。Hatzopoulos等[45]和Gong等[46]基于情绪级联模型对反刍思维在情绪与NSSI间的调节作用进行了研究，结果表明反刍思维可以与积极情绪相互作用，调节并影响NSSI发生的频率，即反复思考负性情绪并沉浸其中可能导致个体出现NSSI，而积极情绪的反刍思维可以减少NSSI发生的频率。Tonta等[47]认为，反刍思维与注意力控制相结合可以调节负性情绪，NSSI会转移个体对负性反刍思维的注意力，使个体从负性经历中暂时脱离。Rosario-Williams等[48]对NSSI的认知调节因素进行了研究，结果表明反刍思维调节了NSSI与自杀意念之间的关系，并且包括反刍思维等认知因素可以减少有NSSI病史个体的自杀意念并降低易感性，即反刍思维调节了情绪等认知情感因素对NSSI的影响；该研究也验证了CEM NSSI。因此，在青少年NSSI的认知情绪干预中，可以选择针对反刍思维的干预方法，中断其消极反刍思维以转移注意力，提升积极情绪并减少自杀意念。

3.反刍思维对NSSI的保护作用：虽然目前关于反刍思维的研究大多聚焦于其消极影响，但也有一些学者开始关注积极情绪的反刍思维及其保护作用。积极反刍是指思考积极的自我品质、积极的情感体验和放大积极影响的生活环境而产生对积极情感状态的反应倾向，并增强正性情感[49]。Hasking等[27]认为，消极情绪的影响与NSSI之间的关系通过积极情绪得以缓和，并强调在研究中要同时考虑积极情绪和消极情绪的影响。Hatzopoulos等[45]基于情绪级联模型对积极情绪与NSSI的关系进行了研究，结果表明积极情绪与NSSI存在相关性，并且积极情绪水平较高的个体有NSSI史的可能性相对较小，即反复思考积极事件和积极情绪可以延长其持续时间，并出现积极的“情绪级联”，而积极的“情绪级联”可以减少并中断消极的“情绪级联”。

因此，积极情绪的反刍思维不仅可以减少NSSI发生的频率，而且可以预防NSSI的发生。Nicolai等[22]也认为，反刍思维可以帮助个体识别适应不良行为，及早对其进行干预，可以防止其出现NSSI。

三、NSSI的反刍思维干预

反刍思维不仅是NSSI的危险因素，还起到预测、调节和保护的作用。因此，针对反刍思维这一靶点对青少年NSSI群体进行针对性干预尤为重要。目前，针对反刍思维采取最多、效果最好的干预方法是以反刍思维为中心的认知行为疗法(rumination-focused CBT, RFCBT)[50]。该疗法将反刍思维概念化为一种无益的习惯性反应，着重于反刍思维的功能分析，并与行为激活疗法相结合，培养具体的思维方式，转移负性反刍思维对个体的影响[51-52]。Jacobs等[53]的研究表明，RFCBT通过转移对消极情绪的注意力和增强认知控制等方式帮助个体识别负性反刍思维，培养积极的心理习惯，以降低消极情绪对青少年的影响；且干预前后的功能性磁共振成像对比显示，接受RFCBT的青少年反刍习惯显著减少。一些研究表明，RFCBT是一种预防性干预，可以帮助青少年改变思维方式与思维习惯，有效减少其对负性事件及负性反刍思维的回避，并减少心理压力和消极情绪对个体的影响[54-56]。虽然目前较少有学者对青少年NSSI的反刍思维进行干预，但通过以上的理论及实证研究可以推断RFCBT可以直接或间接地改善青少年的负性情绪，并且可以预防和减少青少年NSSI的发生。

四、总结与展望

目前，青少年NSSI已经逐渐引起社会的关注。通过对以往文献的回顾可以发现，在NSSI发生和发展的过程中，反刍思维起到了“双刃剑”的作用。反刍思维既是NSSI的危险因素，又起到预防和保护的作用。但目前大多数研究仍存在一定的局限性：(1)青少年NSSI的发病机制目前尚不明确。(2)研究的样本大多是学生群体[12]。虽然NSSI大多发生在青少年群体中，但学生群体与非学生群体的生活经历和社会支持等大不相同，因此研究结果可能存在偏倚。(3)国内学者对积极情绪的反刍思维研究相对较少，无法探究积极反刍思维对NSSI的影响及作用机制。

未来的研究可以扩大研究样本群体，重视非学生青少年群体的心理健康，深入探索青少年NSSI的发病机制和积极反刍思维的作用机制，并将其与眼动、事件相关电位和磁共振成像等生理指标相结合，以探索青少年NSSI反刍思维的认知神经机制，构建针对反刍思维的干预策略。另外，可以对青少年NSSI进行质性研究，深入了解青少年NSSI群体的心理体验，及时做出有效的评估，帮助其增加心理支持。由于导致NSSI的危险因素较为复杂，并且患病青少年多数性格敏感孤僻、社交能力不足，可能不愿承认自己存在NSSI或拒绝接受专业治疗。因此，需要学校和社会更加重视青少年的心理健康，定期进行心理普查与心理疏导，并借助网络等途径关注青少年群体的情绪变化，或成立青少年心理健康互助小组，及时发现有NSSI的青少年并采取专业治疗。未来的干预可以聚焦于青少年的认知和情绪方面，对NSSI高危青少年群体及时进行危机干预，防止其病情发展。

利益冲突 文章所有作者共同认可文章无相关利益冲突

作者贡献声明 论文构思与设计、文献收集及整理、文章撰写为金茜，文章审校与修订为尹斐、朱婉、李梦甜、葛菲、曹建琴

参 考 文 献

[1] Klonsky ED, Victor SE, Saffer BY. Nonsuicidal self-injury: what we know, and what we need to know[J]. Can J Psychiatry, 2014, 59(11): 565-568. DOI: 10.1177/070674371405901101.

[2] Slabbert A, Hasking P, Notebaert L, et al. The Role of Distress Tolerance in the Relationship Between Affect and NSSI[J]. Arch Suicide Res, 2022, 26(2): 761-775. DOI: 10.1080/13811118.2020.1833797.

[3] Lim KS, Wong CH, McIntyre RS, et al. Global lifetime and 12-month prevalenceof suicidal behavior, deliberate self-harm and non-suicidal self-injury in children and adolescents between 1989 and 2018: a Meta-analysis[J]. Int J Environ Res Public Health, 2019, 16(22): 4581. DOI: 10.3390/ijerph16224581.

[4] Lang J, Yao Y. Prevalence of nonsuicidal self-injury in chinese middle school and high school students: a meta-analysis[J]. Medicine (Baltimore), 2018, 97(42): e12916. DOI: 10.1097/MD.0000000000012916.

[5] Keng SL, Lee Y, Drabu S, et al. Construct validity of the mcLean screening instrument for borderline personality disorder in two singaporean samples[J]. J Pers Disord, 2019, 33(4): 450-469. DOI: 10.1521/pedi_2018_32_352.

[6] Kiekens G, Hasking P, Boyes M, et al. The associations between non-suicidal self-injury and first onset suicidal thoughts and behaviors[J]. J Affect Disord, 2018, 239: 171-179. DOI: 10.1016/j.jad.2018.06.033.

[7] Burke TA, Olino TM, Alloy LB. Initial psychometric validation of the non-suicidal self-injury scar cognition scale[J]. J Psychopathol Behav Assess, 2017, 39(3): 546-562. DOI: 10.1007/s10862-017-9595-9.

[8] Sorgi KM, Ammerman BA, Cheung JC, et al. Relationships between non-suicidal self-injury and other maladaptive behaviors: beyond difficulties in emotion regulation[J]. Arch Suicide Res, 2021, 25(3): 530-551. DOI: 10.1080/13811118.2020.1715906.

[9] Cucchi A, Ryan D, Konstantakopoulos G, et al. Lifetime prevalence of non-suicidal self-injury in patients with eating disorders: a systematic review and meta-analysis[J]. Psychol Med, 2016, 46(7): 1345-1358. DOI: 10.1017/S0033291716000027.

[10] 陈慧,周建松.非自杀性自伤行为的成瘾特征研究进展[J].中华精神科杂志, 2022, 55(1): 64-68. DOI: 10.3760/cma.j.cn113661-20210921-00130.
Chen H, Zhou JS. Research progress on the addictive characteristics of non-suicidal self-injury[J]. Chin J Psychiatry, 2022, 55(1): 64-68.

[11] Wang C, Zhang P, Zhang N. Adolescent mental health in China requires more attention[J]. Lancet Public Health, 2020, 5(12): e637. DOI: 10.1016/S2468-2667(20)30094-3.

[12] Nagy LM, Shanahan ML, Seaford SP. Nonsuicidal self-injury and rumination: a meta-analysis[J]. J Clin Psychol, 2023, 79(1): 7-27. DOI: 10.1002/jclp.23394.

[13] Watkins ER, Roberts H. Reflecting on rumination: consequences, causes, mechanisms and treatment of rumination[J]. Behav Res Ther, 2020, 127: 103573. DOI: 10.1016/j.brat.2020.103573.

[14] Nolen-Hoeksema S, Wisco BE, Lyubomirsky S. Rethinking rumination[J]. Perspect Psychol Sci, 2008, 3(5): 400-424. DOI: 10.1111/j.1745-6924.2008.00088.x.

[15] Hasking P, Boyes ME, Finlay-Jones A, et al. Common pathways to NSSI and suicide ideation: the roles of rumination and self-compassion[J]. Arch Suicide Res, 2019, 23(2): 247-260. DOI: 10.1080/13811118.2018.1468836.

[16] Kovács LN, Takacs ZK, Tóth Z, et al. Rumination in major depressive and bipolar disorder - a meta-analysis[J]. J Affect Disord, 2020, 276: 1131-1141. DOI: 10.1016/j.jad.2020.07.131.

[17] Moulds ML, Bisby MA, Wild J, et al. Rumination in posttraumatic stress disorder: a systematic review[J]. Clin Psychol Rev, 2020, 82: 101910. DOI: 10.1016/j.cpr.2020.101910.

[18] Coleman SE, Dunlop BJ, Hartley S, et al. The relationship between rumination and NSSI: a systematic review and meta-analysis[J]. Br J Clin Psychol, 2022, 61(2): 405-443. DOI: 10.1111/bjc.12350.

[19] 王琳琳,许伽彬,雷千乐,等.青少年反刍思维与非自杀性自伤相关性的meta分析[J].中国心理卫生杂志, 2022, 36(9): 793-798. DOI: 10.3969/j.issn.1000-6729.2022.09.012.
Wang LL, Xu JB, Lei QL, et al. A meta-analysis of relationship between rumination and non-suicidal self-injury in adolescents[J]. Chinese Mental Health Journal, 2022, 36(9): 793-798.

[20] 甘明星,王蒙,林丽华,等.青少年儿童期心理虐待与忽视对非自杀性自伤行为:反刍思维和认知融合的链式中介作用[J].中国健康心理学杂志, 2021, 29(5): 787-791. DOI: 10.13342/j.cnki.cjhp.2021.05.030.
Gan MX, Wang M, Lin LH, et al. Effect of psychological abuse and neglect on non-suicidal self-injury: the chain mediating role of ruminant thinking and cognitive fusion[J]. China Journal of Health Psychology, 2021, 29(5): 787-791.

[21] 张雯晴,张婷,杨松谕,等.反刍思维和抑郁在青少年抑郁障碍患者非自杀性自伤与自杀意念间的链式中介作用[J].中华行为医学与脑科学杂志, 2022, 31(5): 425-430. DOI: 10.3760/cma.j.cn371468-20211223-00745.
Zhang WQ, Zhang T, Yang SY, et al. A chain mediating model of rumination and depression between non-suicidal self-injury and suicidal ideation in adolescents with depressive disorder[J]. Chin J Behav Med & Brain Sci, 2022, 31(5): 425-430.

[22] Nicolai KA, Wielgus MD, Mezulis A. Identifying risk for self-harm: rumination and negative affectivity in the prospective prediction of nonsuicidal self-injury[J]. Suicide Life Threat Behav, 2016, 46(2): 223-233. DOI: 10.1111/sltb.12186.

[23] Selby EA, Anestis MD, Bender TW, et al. An exploration of the emotional cascade model in borderline personality disorder[J]. J Abnorm Psychol, 2009, 118(2): 375-387. DOI: 10.1037/a0015711.

[24] Selby EA, Anestis MD, Joiner TE. Understanding the relationship between emotional and behavioral dysregulation: emotional cascades[J]. Behav Res Ther, 2008, 46(5): 593-611. DOI: 10.1016/j.brat.2008.02.002.

[25] Selby EA, Franklin J, Carson-Wong A, et al. Emotional cascades and self-injury: investigating instability of rumination and negative emotion[J]. J Clin Psychol, 2013, 69(12): 1213-1227. DOI: 10.1002/jclp.21966.

[26] Li Y, Schweizer TH, Young JF, et al. The interplay of chronic interpersonal stress and rumination on nonsuicidal self-injury in youth[J]. Res Child Adolesc Psychopathol, 2021, 49(10): 1373-1385. DOI: 10.1007/s10802-021-00820-1.

[27] Hasking PA, Di Simplicio M, McEvoy PM, et al. Emotional cascade theory and non-suicidal self-injury: the importance of imagery and positive affect[J]. Cogn Emot, 2018, 32(5): 941-952. DOI: 10.1080/02699931.2017.1368456.

[28] Slabbert A, Hasking P, Boyes M. Riding the emotional roller coaster: the role of distress tolerance in non-suicidal self-injury[J]. Psychiatry Res, 2018, 269: 309-315. DOI: 10.1016/j.psychres.2018.08.061.

[29] Bresin K, Verona E. Pain, affect, and rumination: an experimental test of the emotional cascade theory in two undergraduate Samples[J]. J Exp Psychopathol, 2016, 7(2): 205-224. DOI: 10.5127/jep.047715.

[30] Boyes ME, Wilmot A, Hasking PA. Nonsuicidal self-injury-related differences in the experience of negative and positive emotion[J]. Suicide Life Threat Behav, 2020, 50(2): 437-448. DOI: 10.1111/sltb.12599.

[31] McKenzie KC, Gross JJ. Nonsuicidal self-injury: an emotion regulation perspective[J]. Psychopathology, 2014, 47(4): 207-219. DOI: 10.1159/000358097.

[32] Kandsperger S, Schleicher D, Ecker A, et al. Emotional reactivity in adolescents with non-suicidal self-injury and its predictors: a longitudinal study[J]. Front Psychiatry, 2022, 13: 902964. DOI: 10.3389/fpsyt.2022.902964.

[33] Andover MS, Morris BW. Expanding and clarifying the role of emotion regulation in nonsuicidal self-injury[J]. Can J Psychiatry, 2014, 59(11): 569-575. DOI: 10.1177/070674371405901102.

[34] Sorgi-Wilson KM, Cheung JC, Ciesinski NK, et al. Cognition and non-suicidal self-Injury: exploring relationships with psychological functions[J]. Arch Suicide Res, 2022.[Online ahead of print]. DOI: 10.1080/13811118.2022.2106919.

[35] Hasking P, Rose A. A preliminary application of social cognitive theory to nonsuicidal self-injury[J]. J Youth Adolesc, 2016, 45(8): 1560-1574. DOI: 10.1007/s10964-016-0449-7.

[36] Hasking P, Whitlock J, Voon D, et al. A cognitive-emotional model of NSSI: using emotion regulation and cognitive processes to explain why people self-injure[J]. Cogn Emot, 2017, 31(8): 1543-1556. DOI: 10.1080/02699931.2016.1241219.

[37] Buelens T, Luyckx K, Gandhi A, et al. Non-suicidal self-injury in adolescence: longitudinal associations with psychological distress and rumination[J]. J Abnorm Child Psychol, 2019, 47(9): 1569-1581. DOI: 10.1007/s10802-019-00531-8.

[38] Richmond S, Hasking P, Meaney R. Psychological distress and non-suicidal self-injury: the mediating roles of rumination, cognitive reappraisal, and expressive suppression[J]. Arch Suicide Res, 2017, 21(1): 62-72. DOI: 10.1080/13811118.2015.1008160.

[39] Dawkins JC, Hasking PA, Boyes ME, et al. Applying a cognitive-emotional model to nonsuicidal self-injury[J]. Stress Health, 2019, 35(1): 39-48. DOI: 10.1002/smi.2837.

[40] Burke TA, Anne McArthur B, Daryanani I, et al. Latent classes of trait affect and cognitive affective regulation strategies are associated with depression, non-suicidal self-injury, and well-being[J]. J Affect Disord, 2018, 225: 180-187. DOI: 10.1016/j.jad.2017.08.015.

[41] Barrocas AL, Giletta M, Hankin BL, et al. Nonsuicidal self-injury in adolescence: longitudinal course, trajectories, and intrapersonal predictors[J]. J Abnorm Child Psychol, 2015, 43(2): 369-380. DOI: 10.1007/s10802-014-9895-4.

[42] Gromatsky MA, He S, Perlman G, et al. Prospective prediction of first onset of nonsuicidal self-injury in adolescent girls[J]. J Am Acad Child Adolesc Psychiatry, 2020, 59(9): 1049-1057. DOI: 10.1016/j.jaac.2019.08.006.

[43] Hughes CD, King AM, Kranzler A, et al. Anxious and overwhelming affects and repetitive negative thinking as ecological predictors of self-injurious thoughts and behaviors[J]. Cognit Ther Res, 2019, 43(1): 88-101. DOI: 10.1007/s10608-019-09996-9.

[44] Arbuthnott AE, Lewis SP, Bailey HN. Rumination and emotions in nonsuicidal self-injury and eating disorder behaviors: a preliminary test of the emotional cascade model[J]. J Clin Psychol, 2015, 71(1): 62-71. DOI: 10.1002/jclp.22115.

[45] Hatzopoulos K, Boyes M, Hasking P. Relationships between dimensions of emotional experience, rumination, and nonsuicidal self-injury: an application of the Emotional Cascade Model[J]. J Clin Psychol, 2022, 78(4): 692-709. DOI: 10.1002/jclp.23247.

[46] Gong T, Ren Y, Wu J, et al. The associations among self-criticism, hopelessness, rumination, and NSSI in adolescents: a moderated mediation model[J]. J Adolesc, 2019, 72: 1-9. DOI: 10.1016/j.adolescence.2019.01.007.

[47] Tonta KE, Boyes M, Howell J, et al. Modeling pathways to non-suicidal self-injury: the roles of perfectionism, negative affect, rumination, and attention control[J]. J Clin Psychol, 2022, 78(7): 1463-1477. DOI: 10.1002/jclp.23315.

[48] Rosario-Williams B, Kaur S, Miranda R. Examining decentering as a moderator in the relation between non-suicidal self-injury and suicide ideation via cognitive-affective factors[J]. Suicide Life Threat Behav, 2021, 51(4): 741-754. DOI: 10.1111/sltb.12747.

[49] Johnson SL, McKenzie G, McMurrich S. Ruminative responses to negative and positive affect among students diagnosed with bipolar disorder and major depressive disorder[J]. Cognit Ther Res, 2008, 32(5): 702-713. DOI: 10.1007/s10608-007-9158-6.

[50] Watkins ER. Psychological treatment of depressive rumination[J]. Curr Opin Psychol, 2015, 4: 32-36. DOI: 10.1016/j.copsyc.2015.01.020.

[51] Hvenegaard M, Moeller SB, Poulsen S, et al. Group rumination-focused cognitive-behavioural therapy (CBT) v. group CBT for depression: phase Ⅱ trial[J]. Psychol Med, 2020, 50(1): 11-19. DOI: 10.1017/S0033291718003835.

[52] Moeller SB, Austin SF, Hvenegaard M, et al. Rumination-focused cognitive behaviour therapy for non-responsive chronic depression: an uncontrolled group study[J]. Behav Cogn Psychother, 2020, 48(3): 376-381. DOI: 10.1017/S1352465819000584.

[53] Jacobs RH, Watkins ER, Peters AT, et al. Targeting ruminative thinking in adolescents at risk for depressive relapse: rumination-focused cognitive behavior therapy in a pilot randomized controlled trial with resting state fMRI[J]. PLoS One, 2016, 11(11): e0163952. DOI: 10.1371/journal.pone.0163952.

[54] Roberts H, Jacobs RH, Bessette KL, et al. Mechanisms of rumination change in adolescent depression (RuMeChange): study protocol for a randomised controlled trial of rumination-focused cognitive behavioural therapy to reduce ruminative habit and risk of depressive relapse in high-ruminating adolescents[J]. BMC Psychiatry, 2021, 21(1): 206. DOI: 10.1186/s12888-021-03193-3.

[55] Feldhaus CG, Jacobs RH, Watkins ER, et al. Rumination-focused cognitive behavioral therapy decreases anxiety and increases behavioral activation among remitted adolescents[J]. J Child Fam Stud, 2020, 29(7): 1982-1991. DOI: 10.1007/s10826-020-01711-7.

[56] Cook L, Mostazir M, Watkins E. Reducing stress and preventing depression (RESPOND): randomized controlled trial of web-based rumination-focused cognitive behavioral therapy for high-ruminating university students[J]. J Med Internet Res, 2019, 21(5): e11349. DOI: 10.2196/11349.

(收稿日期: 2023-03-26)
(本文编辑: 赵金鑫)