

# 抑郁症与风险倾向的关系综述

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## 摘要

抑郁症是一种常见的心理疾病, 通常伴随着一些高风险的行为, 例如酗酒、暴饮暴食、自我伤害甚至是自杀行为。这些行为通常与抑郁症患者的风险倾向息息相关。然而, 抑郁症与风险倾向之间的关系仍未确定。目前衡量风险倾向的研究方式主要有自我报告法和实验室任务范式。因此, 我们基于自我报告量表和部分实验室任务范式来讨论抑郁症和风险倾向之间的关系。我们发现, 抑郁症与风险倾向之间的关系并不是简单的有或无。基于自我报告量表, 荟萃分析表明中低等收入国家的青少年群体中, 抑郁患者相较于健康人表现出更多的风险行为。采用爱荷华赌博任务作为实验范式的研究, 目前结果仍具有很大的争议。在以气球模拟风险任务为实验范式的研究中, 大多数研究都支持抑郁症患者更加保守这一观点。本文认为, 后续的研究者应该关注不同任务范式差异背后的原因和机制; 对于同一任务范式, 如爱荷华赌博任务, 研究者应该着重关注个体特征对于抑郁症患者风险倾向的影响。

## 关键词

抑郁症, 风险倾向, 自我报告量表, 爱荷华赌博任务, 气球模拟风险任务

# A Review of the Relationship between Depression and Risk-Taking

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## Abstract

Depression is a common psychological disorder that is often associated with high-risk behaviors such as alcohol abuse, binge eating, self-harm, and even suicide. However, the relationship between depression and risk propensity is still not well understood. Currently, research methods for measuring risk attitudes mainly include self-report scales and laboratory task paradigms. Based

on self-report scales and some laboratory task paradigms, we discuss the relationship between depression and risk propensity. Through a systematic review, we found that the relationship between depression and risk propensity is not a simple yes or no. Based on self-report scales, current meta-analyses suggest that depressed individuals exhibit more risky behaviors than healthy individuals in adolescent populations in low- to middle-income countries. Studies using the Iowa Gambling Task paradigm still have a lot of controversies. In studies using the Balloon Analogue Risk Task paradigm, most studies support that depressed individuals tend to be more conservative. Therefore, future researchers should focus on the reasons and mechanisms behind the differences in different task paradigms. For the same task paradigm, such as the Iowa Gambling Task, researchers should pay more attention to the influence of individual characteristics on the risk propensity of depressed individuals.

## Keywords

Depression, Risk-Taking, Self-Report Measures, Iowa Gambling Task, Balloon Analogue Risk Task

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## 1. 引言

抑郁症是一种常见的心理疾病，抑郁症患者通常表现为情绪低落，厌恶活动。据世界卫生组织统计，目前全球超过 2.8 亿人受到抑郁症的影响，约占全球人数的 3.5%。此外，近几年 COVID-19 的全球大流行对许多人的心理健康产生了负面影响，导致抑郁症患者的人数激增(Evans et al., 2021)。因此，对抑郁症提高关注，具有十分重要的意义。拥有抑郁症的经历会影响一个人的各个方面，包括思想、情绪和决策等。值得注意的是，抑郁症通常伴随着一些高风险的行为，例如酗酒、暴饮暴食、自我伤害甚至自杀行为(Bannink et al., 2015; Langille et al., 2012; Testa & Steinberg, 2010)。而这些行为通常与抑郁症患者的风险倾向相关。

然而，抑郁症与风险倾向之间的关系仍未确定，一些研究者认为，抑郁症患者会更加的保守，更加不愿意冒险。他们给出了以下理由来支持他们的观点。首先，抑郁症患者缺乏非抑郁症个体不切实际的乐观主义精神(Alloy & Abramson, 1982)，从而导致他们对危险的结果更加的悲观。其次，相较于非抑郁症个体，抑郁症患者会对信息进行更加详细的加工和思考(Lyubomirsky & Nolen-Hoeksema, 1995)，这可能会导致抑郁症患者在行动之前会更多的考虑危险行为所带来的后果。最后，抑郁症患者无法容忍任何负面经历(Leith & Baumeister, 1996)。与之相反的是，一些研究者认为，相较于健康人，抑郁症患者会更加冒险。他们认为抑郁症患者对自己未来健康的无望以及低自我效能感会导致自我保护的理由减少(Kosunen et al., 2003; Rohde et al., 2001)。其次，消极的自杀行为也有可能导致抑郁症患者对冒险较少的担忧(Stein et al., 2003)。最后，抑郁症个体可能会冒更大的风险，来试图逃避和抑制负面情绪(Leas & Mellor, 2000)。

对个体风险倾向或风险态度的衡量一般采用两种方式：自我报告量表和实验任务范式。本文将基于自我报告量表和部分实验任务范式来展开对抑郁症与风险倾向之间关系的讨论。

## 2. 衡量风险倾向的方法

目前研究风险倾向的范式有两种，一种是自我报告量表，另一种是实验任务范式，例如爱荷华赌博任务、气球模拟风险任务。早期大多数关于抑郁症与风险态度之间关系的研究使用的是自我报告量表，

因为他们便于实施。后来，大多数研究则是采用决策任务范式，因为这些任务范式可以有效避免社会期望效应对抑郁症患者的影响，因此所得结果更加的客观。

## 2.1. 自我报告量表

自我报告量表是一种心理测量工具，用于评估个体的主观经验、信念、态度、情绪、行为和人格特质等心理特征。它是通过被试自行填写或回答问题的方式进行测量的。自我报告量表通常采用多项选择题或者填空题的形式，被试需要根据自己的感受或认知选择相应的答案。在测量过程中，被试需要回答有关自身情况、观点、态度或人格特质等方面的问题。这些问题可能与生活事件、家庭环境、个体经历和健康状况等有关(Fielding, 2006)。

自我报告量表的优点在于简单易行，可以快速地获得大量数据，并且可以在大规模研究中使用。然而，自我报告量表存在一些局限性，如被试可能会出现社会期望效应、回答偏差、信息不完整等问题。此外，由于自我报告量表只能测量个体的主观感受和认知，可能无法反映个体的真实行为和客观状况(Northrup, 1997)。

## 2.2. 实验室任务范式

关于衡量风险态度的任务范式有很多，如爱荷华赌博任务、气球模拟风险任务、剑桥赌博任务和骰子任务等等。种类繁多、不胜枚举。其中，爱荷华赌博任务和气球模拟风险任务在衡量风险态度方面，使用的频率最高，影响力最大，可以很好的反应现实世界中的决策和风险行为(Bechara et al., 2001; Lejuez et al., 2002; Verdejo-García et al., 2006)。因此我们将着重介绍这两个实验范式，并基于这两个任务范式对我们的研究展开论述。

### 2.2.1. 爱荷华赌博任务

爱荷华赌博任务是一项广泛用于心理学和神经科学研究中的行为任务，旨在测量个体的决策行为和风险偏好。爱荷华赌博任务中有四个牌组，分别是 A、B、C 和 D 牌组。A、B 牌组具有较大的盈利和损失，最终结果是“总体净亏损”，是不利的牌组。而 C、D 牌组具有较小的盈利和损失，最终结果是“总体净盈利”，是有利的牌组。经典的爱荷华赌博任务有 100 个试次。在每一个试次中，被试均需要从四个牌组中选择一个。在爱荷华赌博任务中，评价被试风险倾向的指标是净分数，该指标的计算方法是将被试选择的不利牌组的次数减去有利牌组的选择次数。

### 2.2.2. 气球模拟风险任务

气球模拟风险任务是一项用于测量个体风险行为差异的行为任务，被广泛应用于心理学和神经科学研究中。在气球模拟风险任务中，被试会看到一个计算机化的气球，他们可以通过点击按钮将其充气。每次充气都会赚取一定数量的分数，但是如果被试充气过多，气球会爆炸，所有分数都会丢失。这个任务的设计旨在模拟现实世界中的风险行为情境，个体必须平衡冒险带来的潜在回报与失败的潜在成本。其风险评价的标准是，未爆炸气球的平均泵数。气球模拟风险任务已被用于各种研究中，包括研究药物、人格特征和心理障碍对风险行为的影响。

## 3. 抑郁症与风险倾向关系的研究现状

### 3.1. 自我报告量表下的研究现状

早期关于抑郁症与风险行为之间的研究，较多的采用自我报告量表。在本综述中，我们将风险行为定义成自愿的、可观察到的行为，这些行为导致残疾或过早死亡，并给整个社会带来消极影响(Jeffery, 1989;

GBD 2017 Causes of Death Collaborators, 2018)。比如风险性行为、药物滥用、自我伤害以及自杀行为等。几项纵向研究发现,抑郁症状通常与危险性行为之间存在相关,如无保护性措施和少女怀孕等(DiClemente et al., 2001; Lehrer et al., 2006; Seth et al., 2011)。有的研究者发现抑郁症患者存在酗酒和药物滥用的情况(Dixit & Crum, 2000; Wolitzky-Taylor et al., 2012)。此外抑郁症患者通常伴随着自我伤害(Zhang et al., 2016),严重时甚至导致自杀行为(Zhao & Zhang, 2014)。然而,有一些研究者对此却持不同的意见。他们认为抑郁症与风险行为之间并没有显著相关,如药物滥用(Victora et al., 2008)。在2022年,有学者对相关文献进行汇总,并展开荟萃分析,发现抑郁症与多种风险行为之间存在显著相关,如风险性行为、自我伤害、自杀、逃课等等(Pozuelo et al., 2022)。但这一项研究的主要针对的对象是低收入和中等收入国家的青少年群体。而关于发达国家,以及其他年龄阶段的抑郁症与风险行为之间的关系,仍有待于进一步的研究。

基于自我报告量表,荟萃分析已经确认低收入和中等收入国家的青少年群体,与健康人相比,出现更多的风险行为。

## 3.2. 实验范式下研究现状

### 3.2.1. 爱荷华赌博任务

爱荷华赌博任务是一项广泛用于心理学和神经科学研究中的行为任务,旨在测量个体的决策行为和风险偏好。基于爱荷华赌博任务对抑郁症与风险倾向之间关系的研究有很多,但所得的结论却不统一。有的研究者认为,相比较于正常人,抑郁症患者更加具有风险倾向。Adida等人比较了躁狂症患者、抑郁症患者和健康人,发现躁狂症患者和抑郁症患者相对于健康被试选择了更多的风险牌(Adida et al., 2011)。有的研究指出有自杀史的抑郁症患者更冒险,而无自杀史的患者的风险倾向与健康人没有差别(Alacreu-Crespo et al., 2020)。也有研究指出,无论有无自杀史,相较于健康人,抑郁症患者都更加的冒险(Moniz et al., 2017)。同样的,有的研究者直接比较了抑郁症患者与健康人之间在风险态度上的差异,发现抑郁症患者更加的冒险(Moniz et al., 2016)。然而有的研究者对此持有不同的意见。他们认为抑郁症患者与健康人在风险倾向上没有差异(Husain et al., 2021; Jollant et al., 2016)。即便是有自杀史的抑郁症患者,也没有表现出差异(Gorlyn et al., 2013)。在所有以老年人为对象的研究中,均没有发现抑郁老年人比非抑郁老年人更冒险(Alexopoulos et al., 2015; Santos Siqueira et al., 2022)。目前采用爱荷华赌博任务来对青少年风险倾向的研究的文献较少,仅发现一篇。该研究结果显示抑郁症女孩比对照组女孩选择更多的优势牌,而抑郁症男孩比对照组男孩选择更少的优势牌(Han et al., 2012),其结果出现了性别差异。

目前采用爱荷华赌博任务研究抑郁症和风险倾向之间关系的研究,其结果出现了较大争议。

### 3.2.2. 气球模拟风险任务

由Lejuez等人开发的气球模拟风险任务是评估风险倾向的最广泛的范式之一(Lejuez et al., 2002)。由于其较高的生态效度,气球模拟风险任务已被广泛用于许多领域,如,现实生活中的危险行为(Aklin et al., 2005; MacPherson et al., 2010),和心理生理过程和障碍(Lei et al., 2017)。

基于气球模拟风险任务,Hevey等人比较了抑郁症患者和健康人,发现抑郁症患者更加的风险厌恶(Hevey et al., 2017)。有的研究者发现,相较于健康人和无自杀史的抑郁症患者,有自杀史的抑郁症患者更加的保守(Ji et al., 2021a, 2021b)。Fan等人发现,在神经生理学方面,抑郁症患者对负反馈的相关的负波分量比健康人更大(Fan et al., 2021)。Gao等人的研究发现,虽然抑郁症患者与健康被试之间在行为数据上没有差异,但是抑郁症患者的左侧腹侧纹状体对风险水平的敏感度较低(Gao et al., 2021)。

目前,采用气球模拟风险任务研究抑郁症和风险倾向之间关系的研究,大多数研究支持抑郁症患者更加的保守,而不是冒险。



## 4. 讨论

经过系统的阐述,我们发现抑郁症与风险倾向之间的关系是复杂的。并非简单的是或否。以自我报告量表来研究抑郁症与风险行为之间的关系,荟萃分析表明低等收入和中等收入国家中的青少年群体中,抑郁症与风险行为存在显著的相关。

然而,实验室任务范式的结果却出现了很大的争议。首先是不同任务范式之间存在差异。在爱荷华赌博任务中,研究结果较多的支持抑郁症患者更加的具有风险倾向,或抑郁症患者与健康人在风险倾向上没有差异。在气球模拟风险任务中,研究结果较多的支持了抑郁症患者更加的风险规避。我们推断,这种差异可能是各自任务对风险的定义和各自任务中的基本过程造成的。在爱荷华赌博任务中,风险偏好是由负面的结果来定义的,这通常被操作为从两张有利的牌中选择数量减去两张不利的牌的数量(Bechara et al., 1994)。在气球模拟风险任务中,未爆气球的平均泵数、可能结果的变异性,衡量了风险倾向(Lejuez et al., 2002)。至于爱荷华赌博任务和气球模拟风险任务的基本过程,有的研究者认为,这两项任务的测量损失厌恶和决策一致性过程类似,但学习过程却不相同(Bishara et al., 2009)。参与者在爱荷华赌博任务中通过损失的大小来感知风险;但在气球模拟风险任务中则通过损失的概率来感知风险,并在爱荷华赌博任务中学习报酬结构,而在气球模拟风险任务中,他们知道报酬,但必须学习模拟气球的随机结构。气球模拟风险任务和爱荷华赌博任务中对风险和基本过程的定义可能解释了当前分组分析中这两个任务的结果差异。有研究指出尽管两个范式有一些相似之处,例如,对真钱的连续和重复的决定,对任务中风险的最初不确定性,但气球模拟风险任务和爱荷华赌博任务之间的结果没有明显的相关性(Aklin et al., 2005)。对于同一任务范式之间的差异,我们推断可能与被试的个人特征相关,如年龄、性别、种族、抑郁类型、抑郁水平等有关。如以老年期的被试为研究对象的研究,则认为抑郁症患者与健康被试在风险倾向上无差异;以青少年为研究对象的研究,甚至产生了性别上的差异。鉴于老年人和青少年为对象的研究较少,所以我们对所得出的结论持谨慎的态度。但这种差异理应引起研究者的重视。

未来的研究方向,在采用自我报告量表来研究抑郁症和风险倾向之间关系的研究方面,应当关注其他年龄阶段的研究,如老年期。对于实验室任务范式,应当着重探讨为何不同研究范式之间存在差异,其机制何在。对于同一种研究范式,应该关注个体特征对实验结果的影响。

## 参考文献

- Adida, M., Jollant, F., Clark, L., Besnier, N., Guillaume, S., Kaladjian, A. et al. (2011). Trait-Related Decision-Making Impairment in the Three Phases of Bipolar Disorder. *Biological Psychiatry*, 70, 357-365. <https://doi.org/10.1016/j.biopsych.2011.01.018>
- Aklin, W. M., Lejuez, C. W., Zvolensky, M. J., Kahler, C. W., & Gwadz, M. (2005). Evaluation of Behavioral Measures of Risk Taking Propensity with Inner City Adolescents. *Behaviour Research and Therapy*, 43, 215-228. <https://doi.org/10.1016/j.brat.2003.12.007>
- Alacreu-Crespo, A., Guillaume, S., Seneque, M., Olie, E., & Courtet, P. (2020). Cognitive Modelling to Assess Decision-Making Impairments in Patients with Current Depression and with/without Suicide History. *European Neuropsychopharmacology*, 36, 50-59. <https://doi.org/10.1016/j.euroneuro.2020.04.006>
- Alexopoulos, G. S., Manning, K., Kanellopoulos, D., McGovern, A., Seirup, J. K., Banerjee, S., & Gunning, F. (2015). Cognitive Control, Reward-Related Decision Making and Outcomes of Late-Life Depression Treated with an Antidepressant. *Psychological Medicine*, 45, 3111-3120. <https://doi.org/10.1017/S0033291715001075>
- Alloy, L. B., & Abramson, L. Y. (1982). Learned Helplessness, Depression, and the Illusion of Control. *Journal of Personality and Social Psychology*, 42, 1114-1126. <https://doi.org/10.1037//0022-3514.42.6.1114>
- Bannink, R., Broeren, S., Heydelberg, J., van't Klooster, E., & Raat, H. (2015). Depressive Symptoms and Clustering of Risk Behaviours among Adolescents and Young Adults Attending Vocational Education: A Cross-Sectional Study. *BMC Public Health*, 15, Article No. 396. <https://doi.org/10.1186/s12889-015-1692-7>
- Bechara, A., Damasio, A. R., Damasio, H., & Anderson, S. W. (1994). Insensitivity to Future Consequences Following

- Damage to Human Prefrontal Cortex. *Cognition*, 50, 7-15. [https://doi.org/10.1016/0010-0277\(94\)90018-3](https://doi.org/10.1016/0010-0277(94)90018-3)
- Bechara, A., Dolan, S., Denburg, N., Hindes, A., Anderson, S. W., & Nathan, P. E. (2001). Decision-Making Deficits, Linked to a Dysfunctional Ventromedial Prefrontal Cortex, Revealed in Alcohol and Stimulant Abusers. *Neuropsychologia*, 39, 376-389. [https://doi.org/10.1016/S0028-3932\(00\)00136-6](https://doi.org/10.1016/S0028-3932(00)00136-6)
- Bishara, A. J., Pleskac, T. J., Fridberg, D. J., Yechiam, E., Lucas, J., Busemeyer, J. R., Finn, P. R., & Stout, J. C. (2009). Similar Processes despite Divergent Behavior in Two Commonly Used Measures of Risky Decision Making. *Journal of Behavioral Decision Making*, 22, 435-454. <https://doi.org/10.1002/bdm.641>
- DiClemente, R. J., Wingood, G. M., Crosby, R. A., Sionean, C., Brown, L. K., Rothbaum, B. et al. (2001). A Prospective Study of Psychological Distress and Sexual Risk Behavior among Black Adolescent Females. *Pediatrics*, 108, e85. <https://doi.org/10.1542/peds.108.5.e85>
- Dixit, A. R., & Crum, R. M. (2000). Prospective Study of Depression and the Risk of Heavy Alcohol Use in Women. *American Journal of Psychiatry*, 157, 751-758. <https://doi.org/10.1176/appi.ajp.157.5.751>
- Evans, S., Alkan, E., Bhangoo, J. K., Tenenbaum, H., & Ng-Knight, T. (2021). Effects of the COVID-19 Lockdown on Mental Health, Wellbeing, Sleep, and Alcohol Use in a UK Student Sample. *Psychiatry Research*, 298, Article ID: 113819. <https://doi.org/10.1016/j.psychres.2021.113819>
- Fan, L., Kong, X., Zhang, P., Lin, P., Zhao, J., Ji, X. et al. (2021). Hypersensitivity to Negative Feedback during Dynamic Risky-Decision Making in Major Depressive Disorder: An Event-Related Potential Study. *Journal of Affective Disorders*, 295, 1421-1431. <https://doi.org/10.1016/j.jad.2021.09.019>
- Fielding, N. G. (2006). *The SAGE Dictionary of Social Research Methods*. SAGE Publications. <https://doi.org/10.4135/9780857020116>
- Gao, F., Fan, J., Xia, J., Soondrum, T., Liu, W. T., Du, H. Y. et al. (2021). Decreased Sensitivity to Risk Levels in Ventral Stratum in Major Depressive Disorder During Risky Decision-Making. *Journal of Affective Disorders*, 282, 187-193. <https://doi.org/10.1016/j.jad.2020.12.131>
- GBD 2017 Causes of Death Collaborators (2018). Global, Regional, and National Age-Sex-Specific Mortality for 282 Causes of Death in 195 Countries and Territories, 1980-2017: A Systematic Analysis for the Global Burden of Disease Study 2017. *Lancet*, 392, 1736-1788. [https://doi.org/10.1016/S0140-6736\(18\)32203-7](https://doi.org/10.1016/S0140-6736(18)32203-7)
- Gorlyn, M., Keilp, J. G., Oquendo, M. A., Burke, A. K., & Mann, J. J. (2013). Iowa Gambling Task Performance in Currently Depressed Suicide Attempters. *Psychiatry Research*, 207, 150-157. <https://doi.org/10.1016/j.psychres.2013.01.030>
- Han, G., Klimes-Dougan, B., Jepsen, S., Ballard, K., Nelson, M., Hourii, A., Kumra, S., & Cullen, K. (2012). Selective Neurocognitive Impairments in Adolescents with Major Depressive Disorder. *Journal of Adolescence*, 35, 11-20. <https://doi.org/10.1016/j.adolescence.2011.06.009>
- Hevey, D., Thomas, K., Laureano-Schelten, S., Looney, K., & Booth, R. (2017). Clinical Depression and Punishment Sensitivity on the BART. *Frontiers in Psychology*, 8, Article 670. <https://doi.org/10.3389/fpsyg.2017.00670>
- Husain, S. F., Ong, S. K., Liu, C. Z., Tran, B., Ho, R. C., & Ho, C. S. (2021). Functional Near-Infrared Spectroscopy during a Decision-Making Task in Patients with Major Depressive Disorder. *Australian and New Zealand Journal of Psychiatry*, 55, 485-493. <https://doi.org/10.1177/0004867420976856>
- Jeffery, R. W. (1989). Risk Behaviors and Health: Contrasting Individual and Population Perspectives. *American Psychologist*, 44, 1194-1202. <https://doi.org/10.1037//0003-066X.44.9.1194>
- Ji, X. L., Zhao, J. H., Fan, L. J., Li, H. H., Lin, P., Zhang, P. W. et al. (2021a). Highlighting Psychological Pain Avoidance and Decision-Making Bias as Key Predictors of Suicide Attempt in Major Depressive Disorder—A Novel Investigative Approach Using Machine Learning. *Journal of Clinical Psychology*, 78, 671-691. <https://doi.org/10.1002/jclp.23246>
- Ji, X. L., Zhao, J. H., Li, H. H., Pizzagalli, D. A., Law, S., Lin, P. et al. (2021b). From Motivation, Decision-Making to Action: An fMRI Study on Suicidal Behavior in Patients with Major Depressive Disorder. *Journal of Psychiatric Research*, 139, 14-24. <https://doi.org/10.1016/j.jpsychires.2021.05.007>
- Jollant, F., Richard-Devantoy, S., Ding, Y., Turecki, G., Bechara, A., & Near, J. (2016). Prefrontal Inositol Levels and Implicit Decision-Making in Healthy Individuals and Depressed Patients. *European Neuropsychopharmacology*, 26, 1255-1263. <https://doi.org/10.1016/j.euroneuro.2016.06.005>
- Kosunen, E., Kaltiala-Heino, R., Rimpela, M., & Laippala, P. (2003). Risk-Taking Sexual Behaviour and Self-Reported Depression in Middle Adolescence—A School-Based Survey. *Child Care Health and Development*, 29, 337-344. <https://doi.org/10.1046/j.1365-2214.2003.00357.x>
- Langille, D., Asbridge, M., Kisely, S., & Wilson, K. (2012). Risk of Depression and Multiple Sexual Risk-Taking Behaviours in Adolescents in Nova Scotia, Canada. *Sexual Health*, 9, 254-260. <https://doi.org/10.1071/SH11029>
- Leas, L., & Mellor, D. (2000). Prediction of Delinquency: The Role of Depression, Risk-Taking, and Parental Attachment. *Behaviour Change*, 17, 155-166. <https://doi.org/10.1375/bech.17.3.155>

- Lehrer, J. A., Shrier, L. A., Gortmaker, S., & Buka, S. (2006). Depressive Symptoms as a Longitudinal Predictor of Sexual Risk Behaviors among US Middle and High School Students. *Pediatrics*, *118*, 189-200. <https://doi.org/10.1542/peds.2005-1320>
- Lei, Y., Wang, L. B., Chen, P. H., Li, Y. Y., Han, W., Ge, M. M. et al. (2017). Neural Correlates of Increased Risk-Taking Propensity in Sleep-Deprived People Along with a Changing Risk Level. *Brain Imaging and Behavior*, *11*, 1910-1921. <https://doi.org/10.1007/s11682-016-9658-7>
- Leith, K. P., & Baumeister, R. F. (1996). Why Do Bad Moods Increase Self-Defeating Behavior? Emotion, Risk Taking, and Self-Regulation. *Journal of Personality and Social Psychology*, *71*, 1250-1267. <https://doi.org/10.1037//0022-3514.71.6.1250>
- Lejuez, C. W., Read, J. P., Kahler, C. W., Richards, J. B., Ramsey, S. E., Stuart, G. L., Strong, D. R., & Brown, R. A. (2002). Evaluation of a Behavioral Measure of Risk Taking: The Balloon Analogue Risk Task (BART). *Journal of Experimental Psychology: Applied*, *8*, 75-84. <https://doi.org/10.1037//1076-898X.8.2.75>
- Lyubomirsky, S., & Nolen-Hoeksema, S. (1995). Effects of Self-Focused Rumination on Negative Thinking and Interpersonal Problem Solving. *Journal of Personality and Social Psychology*, *69*, 176-190. <https://doi.org/10.1037//0022-3514.69.1.176>
- MacPherson, L., Magidson, J. F., Reynolds, E. K., Kahler, C. W., & Lejuez, C. W. (2010). Changes in Sensation Seeking and Risk-Taking Propensity Predict Increases in Alcohol Use among Early Adolescents. *Alcohol: Clinical and Experimental Research*, *34*, 1400-1408. <https://doi.org/10.1111/j.1530-0277.2010.01223.x>
- Moniz, M., de Jesus, S. N., Goncalves, E., Pacheco, A., & Viseu, J. (2016). Decision-Making in Adult Unipolar Depressed Patients and Healthy Subjects: Significant Differences in Net Score and in Non-Traditional Alternative Measures. *Neuropsychological Trends*, *19*, 7-15. <https://doi.org/10.7358/neur-2016-019-moni>
- Moniz, M., de Jesus, S. N., Pacheco, A., Goncalves, E., Viseu, J., Bras, M. et al. (2017). The Influence of Planning and Response Inhibition on Cognitive Functioning of Non-Psychotic Unipolar Depressed Suicide Attempters. *Europes Journal of Psychology*, *13*, 717-732. <https://doi.org/10.5964/ejop.v13i4.1385>
- Northrup, D. A. (1997). *The Problem of the Self-Report in Survey Research*. Institute for Social Research, York University.
- Pozuelo, J. R., Desborough, L., Stein, A., & Cipriani, A. (2022). Systematic Review and Meta-Analysis: Depressive Symptoms and Risky Behaviors among Adolescents in Low- and Middle-Income Countries. *Journal of the American Academy of Child & Adolescent Psychiatry*, *61*, 255-276. <https://doi.org/10.1016/j.jaac.2021.05.005>
- Rohde, P., Noell, J., Ochs, L., & Seeley, J. R. (2001). Depression, Suicidal Ideation and STD-Related Risk in Homeless Older Adolescents. *Journal of Adolescence*, *24*, 447-460. <https://doi.org/10.1006/jado.2001.0382>
- Seth, P., Patel, S. N., Sales, J. M., DiClemente, R. J., Wingood, G. M., & Rose, E. S. (2011). The Impact of Depressive Symptomatology on Risky Sexual Behavior and Sexual Communication among African American Female Adolescents. *Psychology, Health & Medicine*, *16*, 346-356. <https://doi.org/10.1080/13548506.2011.554562>
- Santos Siqueira, A. S., Biella, M. M., Borges, M. K., Mauer, S., Apolinario, D., Alves, T. et al. (2022). Decision-Making Executive Function Profile and Performance in Older Adults with Major Depression: A Case-Control Study. *Aging & Mental Health*, *26*, 1551-1557. <https://doi.org/10.1080/13607863.2021.1950617>
- Stein, M. D., Solomon, D. A., Herman, D. S., Anderson, B. J., & Miller, I. (2003). Depression Severity and Drug Injection HIV Risk Behaviors. *American Journal of Psychiatry*, *160*, 1659-1662. <https://doi.org/10.1176/appi.ajp.160.9.1659>
- Testa, C. R., & Steinberg, L. (2010). Depressive Symptoms and Health-Related Risk-Taking in Adolescence. *Suicide and Life-Threatening Behavior*, *40*, 298-305. <https://doi.org/10.1521/suli.2010.40.3.298>
- Verdejo-García, A., Vilar-López, R., Pérez-García, M., Podell, K., & Goldberg, E. (2006). Altered Adaptive but Not Veridical Decision-Making in Substance Dependent Individuals. *Journal of the International Neuropsychological Society*, *12*, 90-99. <https://doi.org/10.1017/S1355617706060127>
- Victora, C. G., Hallal, P. C., Araújo, C. L., Menezes, A. M., Wells, J. C., & Barros, F. C. (2008). Cohort Profile: The 1993 Pelotas (Brazil) Birth Cohort Study. *International Journal of Epidemiology*, *37*, 704-709. <https://doi.org/10.1093/ije/dym177>
- Wolitzky-Taylor, K., Bobova, L., Zinbarg, R. E., Mineka, S., & Craske, M. G. (2012). Longitudinal Investigation of the Impact of Anxiety and Mood Disorders in Adolescence on Subsequent Substance Use Disorder Onset and Vice Versa. *Addictive Behaviors*, *37*, 982-985. <https://doi.org/10.1016/j.addbeh.2012.03.026>
- Zhang, J., Song, J., & Wang, J. (2016). Adolescent Self-Harm and Risk Factors. *Asia-Pacific Psychiatry*, *8*, 287-295. <https://doi.org/10.1111/appy.12243>
- Zhao, S., & Zhang, J. (2014). Suicide Risks among Adolescents and Young Adults in Rural China. *International Journal of Environmental Research and Public Health*, *12*, 131-145. <https://doi.org/10.3390/ijerph120100131>