Physical activity and suicidal ideation: A systematic review and meta-analysis

Highlights

• Being physically active is associated with lower suicidal ideation.

• Complying with physical activity guidelines may confer a protective effect on suicidal risks.

• There is a high need for well-designed prospective and interventional studies.

• Future research should explore in more detail gender- and age specific recommendations.

Abstract

Background

A potential approach to suicide prevention that has not been closely examined, but which holds promise in terms of widespread dissemination without major side-effects, is physical activity (PA). This systematic review and meta-analysis set out to: (a) explore associations between PA and suicidal ideation (SI) levels, and (b) investigate the effect of PA interventions on SI.

Methods

Major electronic databases were searched from inception up to 05/2017 to identify quantitative studies reporting an association between PA and SI. A quantitative correlates synthesis and random effects meta-analysis were conducted.

Results
Fourteen of 21 studies in adults (67%) (n = 130,737), 7/14 (50%) in adolescents (n = 539,170) and 2/3 (67%) in older adults (n = 50,745) found a significant negative association between PA- and SI-levels. Pooled adjusted meta-analysis of 14 effect sizes over eight studies and 80,856 people found that those who were “active” versus those who were “inactive” were less likely to have SI (OR = 0.87, 95%CI = 0.76–0.98). Additionally, meeting PA guidelines conferred a significant protective effect against SI (OR = 0.91, 95%CI = 0.51–0.99, P = 0.03; N studies = 3, n people = 122,395), while not meeting guidelines was associated with increased SI (OR = 1.16, 95%CI = 1.09–1.24, P < 0.001; N = 4, n = 78,860). Data from the intervention studies (N = 3, n = 121) was mixed and limited.

Limitations

Our findings are based mainly on cross-sectional studies, while the majority of studies did not include a rigorous physical activity assessment.

Conclusions

The current study suggests that higher PA levels are associated with lower SI. However, the associations observed need to be confirmed in prospective observational studies and controlled trials.