

## How to Improve the Evaluation of Mental Wellbeing as an Outcome of Youth Sports Interventions? A Critical Examination of Self-Report Instruments and Biomarkers

Luna van Kester, Marco Mensink, Kirsten Verkooijen

Wageningen University and Research, Wageningen, The Netherlands

**Purpose:** Sports and physical activity interventions are often used to improve the mental wellbeing of socially disadvantaged youth. While evaluation of these interventions is important to understanding their success, valid and feasible evaluation methods are lacking. This research aimed to identify promising self-report instruments and biomarkers that could improve the quality of the evaluation.

**Methods:** First, a scoping review was conducted to retrieve the most promising self-report instruments and biomarkers. The search in three databases resulted in 12 reviews on self-report instruments and 10 reviews on biomarkers. Characteristics regarding the validity and feasibility of the instruments and biomarkers described in these reviews were extracted and compared. Hereafter, individual semi-structured interviews with two sport coaches and one coordinator of a youth sports intervention were conducted to discuss the results with relevant stakeholders.

**Results:** Self-report instruments should meet the following conditions: under 20 items, a short time frame, comprehensible language, sensitive to change, and available for proxy-reporting. The KIDSCREEN questionnaires and WEMWBS (Warwick-Edinburgh Mental Wellbeing Scales) met most of these conditions. Hair cortisol appeared to be the most promising biomarker of chronic stress. However, solid evidence for an association between biomarkers and mental wellbeing in youth is lacking. Moreover, giving away bodily material (blood, saliva, hair) may be a major obstacle, according to the stakeholders. Physiological parameters (e.g. heart rate, blood pressure) were considered more feasible.

**Conclusion:** This research resulted in recommendations for practice to improve the implementation of self-report instruments for the evaluation of mental wellbeing in youth participants of sports interventions. Biomarkers cannot yet be conclusive about mental wellbeing. Given practitioners' need for valid evaluation measures, more research in this field is recommended.

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