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Bidirectional relationship between sleep disturbances and stress: the role of coping and quality of life

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Introduction: Perceived stress (PS) is strongly associated with sleep disturbances (SD) [e.g. 1]. Despite the growing body of evidence linking these two variables, research examining the non-recursive relationship is lacking. The effect of coping [e.g. 2] and quality of life (QoL) [e.g. 3] in sleep patterns is also well established.

The main objective of this research was to analyze the bidirectional relation between PS and SD with a model that includes coping and QoL as predictors of both variables.

Materials and methods: This cross-sectional study comprised 987 Portuguese adults ($M = 40.90$, $SD = 17.17$) with SD ($M = 2.10$, $SD = 0.55$) that completed questionnaires about sleep patterns (BaSIQS [4]), perceived stress (Perceived Stress Scale [5]), coping strategies (BriefCOPE [6]) and QoL (WHOQOL-BREF [7]). The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki and the protocol was approved by IUEM Scientific Council. All participants signed informed consent.

Results: Canonical Correlation Analysis' results showed that the first correlation (0.562), dominated by PS, suggested a direct association with SD. The second correlation (0.146), dominated by SD, suggested a reverse association with PS. The results of a Structural Equation Modeling with PS and SD as dependent variables showed excellent model fit ($X^2/df = 0.916$, $p = .469$, $GFI = 0.992$, $RMSEA = 0.000$ [0.000 - 0.042]). Self-Blame, Positive Reframing, Denial, Self-Distraction, Social Relationships and Environment were significant predictors of PS. Denial and Environment significantly predicted SD.

Discussion and conclusions: SD depends on PS, but no evidence of a direct effect of SD on PS was observed. Despite the bidirectional relationship not having been confirmed, this study supports the importance of PS in the management of SD. Also, we conclude that coping strategies are important factors in explaining PS rather than SD and that social relationships and environment are the two domains of quality of life that are predictors of PS. Environment is also a predictor of SD.

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