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TITLE: Latent genetic structure of sleep health and psychopathology.

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ABSTRACT:

Sleep health is a construct that has gained popularity in recent literature. It is a multi-faceted construct that includes subjective satisfaction with sleep, alertness during waking hours, adequate sleep duration, timing, regularity and efficiency. These components of sleep health are considered independent and have been shown to be uniquely associated with health and wellbeing outcomes. Sleep health components can be measured subjectively (by self-report or sleep diaries), or objectively (often by actigraphy

or physiological data). Here, we present the first study to examine the genetic structure of sleep health and its relationship to psychopathology. We used Genomic structural equation modeling (SEM) to create latent factors of alertness (subjective daytime sleepiness and objective daytime inactivity), efficiency (objective efficiency and number of sleep episodes), sleep dissatisfaction/disorder (self-reported short sleep [<6 hrs/night] and insomnia) and timing (self-reported chronotype and objective sleep midpoint). We then assessed relationships of these sleep health latent factors with each other and latent psychopathology factors. Alertness, efficiency and dissatisfaction were most strongly genetically associated with psychopathology, in that genetic liability for being less alert during waking hours, having lower efficiency and more sleep dissatisfaction correlated with higher genetic liability for internalizing and externalizing psychopathology. Timing did not significantly associate with any psychopathology factors. Interestingly, a thought disorder factor of anorexia and OCD had a negative genetic correlation with daytime alertness. These correlations imply the unique facets of sleep health are genetically separable and exhibit distinct patterns of associations with psychopathology.

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