



# OPEN Social relations and cellphone addiction mediate the relationship between sleep and quality of life in medical students residing in dormitories

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Environmental and social factors, such as the place of residence, social relations quality, and cell phone addiction, may influence the relationship between sleep quality and quality of life. This study aimed to examine the mediating role of social relations quality and cell phone addiction in the relationship between sleep quality and quality of life among medical students residing in dormitories. In this cross-sectional study, 380 medical students who resided in the university dormitory participated. Pittsburgh Sleep Quality Index (PSQI), WHO Quality-of-Life Scale, Social Relational Quality Scale, and Cell phone Addiction Scale were used. Pearson correlation coefficient and structural equation modeling were used for data analysis through Macro PROCESS SPSS (Model 4). This study indicated that medical students residing in dormitories who experienced better sleep quality and stronger social relations quality reported an enhanced quality of life. The indirect effect of sleep quality on the quality of life was mediated by social relations quality (Effect = -0.09, 95% CI: -0.18 to -0.02). The cell phone addiction did not mediate the effect of sleep quality on the quality of life (Effect = -0.006, 95% CI: -0.04 to 0.02). Given the mediating role of social relations quality in the relationship between sleep quality and quality of life in medical students residing in dormitories, by increasing in quality of sleep using improved quality of social relations led to a better quality of life.

**Keywords** Interpersonal relations, Medical, Technology addiction, Quality of life, Sleep students

Living conditions may affect sleep<sup>1</sup>. The sleep environment in dormitories posed significant challenges for many students, with common issues including uncomfortable room temperatures and frequent noise disturbances<sup>2</sup>. Crowded places were associated with short sleep duration<sup>1</sup>. Medical students residing in dormitories frequently report concerns related to subjective sleep quality, prolonged sleep latency, and daytime dysfunction<sup>3</sup>. It indicated potential challenges in maintaining optimal sleep health in medical students. The mean score of sleep quality of the medical students residing in dormitories indicated a poor level<sup>3</sup>. It reflects significant challenges in maintaining healthy sleep patterns in such living environments. Researchers revealed that approximately half of the medical students reported good subjective sleep quality<sup>4</sup>. A study showed that half of the students slept less than 7 h a night<sup>5</sup>. While studies indicate high rates of poor sleep quality among medical students (e.g., 62.86%)<sup>6,7</sup> there is a lack of consensus, which may reflect differences in participants, cultural context, or assessment tools. These inconsistencies highlight the need for context-specific research, particularly within structured environments such as dormitories.

Several key factors were associated with an increased likelihood of poor sleep quality, including high academic stress, high employment stress, dissatisfaction with dormitory hygiene, poor self-rated physical health, poor self-rated mental health, and higher mobile phone dependency<sup>8</sup>. Furthermore, poor sleep quality among medical students residing in dormitories is not only a widespread concern but also a critical issue due to broader implications. Inadequate sleep could have several negative outcomes, including increased anxiety levels, deterioration of sleep hygiene practices, higher likelihood of current alcohol and tobacco use<sup>9</sup> and poor medical performance<sup>10</sup> and academic achievement<sup>11</sup>. Given the demanding nature of medical education and

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## Author contributions

NK, NP, and MR participated in the design of the study, analysis, and interpretation of the data. The draft and revised article were critically assessed for important intellectual content by all the authors. They approved the versions to be submitted and published. All authors participated in the work to take public responsibility for the