Int. j. adv. multidisc. res. stud. 2026; 6(6):1259-1260

Received: 08-11-2026
Accepted: 18-11-2026

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Letter to the Editor

The Relationship between the Mother's Sleep Quality and the Infant's Weight Depends on the Measurement Tools used and the Determinants of Birth Weight

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Letter to the Editor

We read with interest the article by Yang *et al*. regarding a prospective cohort study on the association between sleep quality in 645 mothers during late pregnancy and the weight development of their newborns from birth to 2 years of age [1]. Most of the mothers reported mild to moderate sleep disturbances, which were assessed using the "Jenkins Sleep Scale" (JSS) [1]. Children whose mothers experienced poor sleep quality showed lower weight between 0 and 6 months of age, followed by more rapid growth; by 1 to 2 years of age, these children had significantly higher weights compared to those whose mothers had good sleep quality [2]. Poor maternal sleep was associated with a less favorable initial weight status, accelerated growth, and higher weight at 1 to 2 years of age [1]. While the study is noteworthy, several aspects warrant further discussion.

A first point is that the JSS has several limitations [2]. Designed primarily as a preliminary screening instrument for general sleep disturbances rather than as a comprehensive diagnostic tool, it fails to capture the full spectrum of sleep disorders - such as sleep apnea, restless legs syndrome, or parasomnias [2]. The JSS does not account for sleep duration, sleep efficiency, or the use of sleep-related medication; consequently, it reflects neither actual sleep duration nor external factors that may disrupt sleep. Furthermore, the JSS is susceptible to "recall bias," as it relies exclusively on subjective self-reports. Individuals completing the JSS tend to underestimate their own sleep problems. Furthermore, the JSS views sleep problems in a one-dimensional manner and cannot readily distinguish between acute, severe insomnia and mild, chronic sleep fragmentation [2].

Another point is that, in addition to the mother’s sleep, other factors influencing birth weight and postnatal weight gain were not sufficiently taken into account in the analysis [1]. One of the most significant factors affecting birth weight is gestational age. Furthermore, multiple pregnancies can result in a lower birth weight compared to singleton pregnancies. Firstborns tend to be slightly smaller than their subsequent siblings, as uterine blood flow increases with each successive pregnancy. It is estimated that genetics account for 25% to 40% of the variance in birth weight; the height, weight, and genetic predisposition of both parents exert a strong influence on the newborn's weight. The mother’s health status and lifestyle also play a crucial role. Inadequate maternal nutrition or insufficient weight gain during pregnancy significantly increase the risk of low birth weight. Conversely, maternal obesity or excessive weight gain can lead to macrosomia (an above-average birth weight). High blood pressure or preeclampsia restricts placental blood flow, which can result in smaller babies. Uncontrolled gestational diabetes leads to an excessive supply of glucose to the fetus, which may result in an above-average birth weight. A maternal age of under 18 or over 35 is associated with an increased risk of giving birth to infants with a lower birth weight or to preterm infants [3]. Smoking, exposure to second hand smoke, alcohol consumption, and drug use can impair the supply of oxygen and nutrients to the fetus, potentially leading to a low birth weight. Finally, placental insufficiency, structural defects of the placenta, or placental abruption can directly inhibit fetal growth. Chronic stress, inadequate prenatal care, and exposure to environmental toxins can also impair intrauterine development.

Unless these factors are incorporated into the analysis, the results and their interpretation may remain unreliable.

Declarations
Ethical approval: Not applicable.

Consent to participation: Not applicable.

Consent for publication: Not applicable.

Funding: None received.

Availability of data and material: All data are available from the corresponding author.

Completing interests: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author contribution: JF was responsible for the design and conception, discussed available data with coauthors, wrote the first draft, and gave final approval. xx: Contributed to literature search, discussion, correction, and final approval.

Acknowledgements: None.

AI tools: Were not used.

Keywords: Pregnancy, Sleep Quality, Weight Gain, Birth Weight, Jenkins Sleep Scale

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