

Sleep Health in Pregnancy

A Scoping Review



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KEYWORDS

- Pregnancy • Trimester • Sleep health • Sleep duration • Sleep efficiency or continuity
- Sleep timing • Sleepiness or alertness • Perceptions of sleep quality

KEY POINTS

- Information on sleep health in pregnancy focuses primarily on sleep duration and sleep continuity/efficiency with limited data available on changes in sleep timing, perceived sleep quality and alertness/sleepiness across pregnancy.
- Sleep is highly variable between pregnant women but healthy sleep does not seem to change markedly across pregnancy. There may be an increase in sleep disturbances in the third trimester.
- Sleep positioning should be considered an aspect of sleep health in pregnancy.
- Research on sleep health across pregnancy is needed, with sample screening criteria clearly specified and women screened for complications throughout data collection not just at recruitment.

INTRODUCTION

For most women, altered sleep is among a multitude of physiologic changes occurring during pregnancy. It is also among the most noticed changes¹ and is a topic women regularly seek information on, yet there is still limited empirical information available on what constitutes healthy sleep in each trimester of pregnancy. This makes it difficult for maternal health care providers to advise women on what changes are within the range of normal.

Previous literature suggests there are alterations to sleep duration, the architecture of sleep, and perceptions of sleep quality, with clear changes occurring between trimesters.^{2–4} Many studies in this area have focused on the possible consequences of altered or disturbed sleep for the health of pregnant women and the health of their growing babies. These have revealed important findings, showing, for example, that short and/or long sleep duration and/or disturbed sleep

are risk factors for preterm birth,^{5,6} gestational diabetes,^{7,8} hypertension,⁹ preeclampsia,¹⁰ increased labor duration, and a greater likelihood of cesarean delivery.¹¹ Poorer antenatal mood and depression^{12–14} and poorer postnatal mood¹⁵ have also been associated with disturbed sleep in pregnancy. These health outcomes have consequences for women and children both in the short term and across the lifespan.

Like the studies that have investigated sleep during pregnancy, sleep science and sleep medicine focus more generally on what can go wrong with sleep. This approach has been important in advancing the understanding of the role of sleep in the development of ill health and disease.^{16–18} However, there is growing recognition that healthy sleep is more than just an absence of sleep problems or a sleep disorder. A sufficient amount of good quality sleep is being acknowledged as among the fundamental components of good health, along with diet and physical activity.^{19,20}

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Recently there has been an effort to frame sleep positively and to look at the potential benefits of good sleep. Buysse²¹ has defined sleep health as "...a multidimensional pattern of sleep-wake-fulness, adapted to individual, social, and environmental demands, that promotes physical and mental well-being." He proposes 5 dimensions of good sleep health: "subjective satisfaction, appropriate timing, adequate duration, high efficiency, and sustained alertness during waking hours."

This shift in focus is highly relevant during pregnancy, a time when women have greater awareness of their own health and are concerned about the consequences for their child. Women also have more frequent interactions with health professionals and are receptive to information on maintaining or improving their health. Pregnancy is normally viewed as a positive time for most women and it is, therefore, relevant to focus on sleep health as a positive component of pregnancy. To do so, women and health professionals need practical, evidence-based information about different aspects of sleep and what constitutes normal healthy ranges. Such information would also allow health professionals to know when women need further assessment and possibly referral for sleep problems.

To the authors' knowledge, there has been no previous attempt to define sleep health in pregnancy. This review summarizes the available research evidence on healthy sleep in each trimester of pregnancy, using a scoping review underpinned by Buysse's²¹ definition of sleep health.

METHODS

The methodology outlined by Arksey and O'Malley²² is the basis for this scoping review. The following key steps were followed: (1) consultation; (2) identifying the research question; (3) identifying the relevant studies; (4) study selection; (5) charting the data, and (6) collating, summarizing, and reporting the results.

Identifying the Research Question

To ensure the topic addressed by the review was relevant and the findings practically useful, potential end users were consulted. These were health care providers working with pregnant women and included an obstetrician, community-based midwife, an antenatal information coordinator at a large regional hospital, and a pregnancy and childbirth education manager of a community-based service. All agreed that information on healthy sleep in pregnancy is sparse,

at best, and that information on this topic would be useful in their clinical environment. This consultation formed the rationale for this scoping review.

Based on the multidimensional definition of sleep health by Buysse,²¹ this review examines the extent of knowledge on sleep duration, sleep continuity/efficiency, sleep timing, daytime alertness/sleepiness, and perceived satisfaction/quality of sleep. It is proposed that healthy sleep is most likely to occur in a healthy, uncomplicated pregnancy; therefore, studies included in this review needed to clearly specify the criteria used to assure that the participating women were healthy. Thus, the research question was: What is known about sleep health in each trimester of pregnancy?

Identifying Relevant Studies

The initial literature search was conducted in the Cochrane Library, PubMed, Medline, psycINFO, Web of Science, CINAHL Complete, and Scopus databases. These databases were systematically searched using key terms for sleep and pregnancy to form a Boolean string. The final string was as follows: (pregnan* OR gestat*) AND (sleep*) AND (quality OR duration OR timing) AND (week* OR trimester* OR early OR mid OR late).

Inclusion or Exclusion Criteria

To ensure broad coverage, studies published in the English language from January 1975 to December 2017 were considered eligible. Only studies that reported sleep in a healthy sample or subsample of pregnant women were included. Data from control groups or subsamples that sufficiently screened participating women were eligible for consideration. For a study to be included in the review, sleep data needed to be presented in sufficient detail; to report means, standard deviations (SDs), or proportions higher or lower than specified cut-offs; and to specify the trimester or gestational week.

Due to an established relationship with altered sleep, the exclusion criteria in each study had to stipulate that participating women self-reported or were screened for current mood disorders and sleep problems. At a minimum, each sample also had to be screened for pregnancy complications or pregnancy-related health issues, which were assumed (if not specifically stated) to include gestational diabetes, hypertensive disorders (eg, hypertension and/or preeclampsia or eclampsia), and other health concerns

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