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CLINICAL REVIEW

Marital quality and the marital bed: Examining the covariation between relationship quality and sleep

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Summary The majority of adults sleep with a partner, and for a significant proportion of couples, sleep problems and relationship problems co-occur, yet there has been little systematic study of the association between close relationships and sleep. The association between sleep and relationships is likely to be bi-directional and reciprocal—the quality of close relationships influences sleep and sleep disturbances or sleep disorders influence close relationship quality. Therefore, the purpose of the present review is to summarize the extant research on (1) the impact of co-sleeping on bed partner's sleep, (2) the impact of sleep disturbance or sleep disorders on relationship functioning, and (3) the impact of close relationship quality on sleep. In addition, we provide a conceptual model of biopsychosocial pathways to account for the covariation between relationship functioning and sleep. Recognizing the dyadic nature of sleep and incorporating such knowledge into both clinical practice and research in sleep medicine may elucidate key mechanisms in the etiology and maintenance of both sleep disorders and relationship problems and may ultimately inform novel treatments.

Introduction

Sleep is both a shared human biological universal and a time of social interaction… (p. 240).[1]

Sleep is a vulnerable physiological state that optimally occurs when one feels sufficiently safe and secure to down-regulate vigilance and alertness. Across the lifespan, such feelings of safety and security are largely derived from the social environment.[2] Conversely, impaired sleep adversely affects the ability to regulate emotions[3] and behavioral responses to interpersonal situations,[4] suggesting a bi-directional association between sleep and the social environment. Given that the marital relationship is the primary social context for most adults and that most married adults sleep with their spouse, marriage may have important implications for sleep. Indeed, a substantial body of evidence suggests that marital

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Nomenclature

ACTH	adrenocorticotropic hormone
AHI	apnea-hypopnea index
CPAP	continuous positive airway pressure
CRH	corticotrophin-releasing hormone
DAS	Dyadic Adjustment Scale
HPA	hypothalamic–pituitary–adrenal axis
LAUP	laser-assisted uvulopalatoplasty
NREM	non-rapid eye movement
OSA	obstructive sleep apnea
OT	oxytocin
PSG	polysomnography
PSQI	Pittsburgh sleep quality index
QOL	quality of life
REM	rapid eye movement
SDB	sleep-disordered breathing
UVPP	uvulopalatopharyngoplasty

status is associated with sleep outcomes, with the divorced typically having more sleep problems compared to their married or single counter-parts.[5] However, all relationships are not equal. Marital role occupancy (i.e., married/divorced/single) reveals little about the qualitative aspects of close relationships that may influence sleep. For instance, amongst the divorced, Cartwright and Wood demonstrated significant reductions in the percentage of Delta sleep between participants currently undergoing a divorce versus those for whom the divorce was complete.[6] These results suggest that the stress of ongoing conflict in the midst of the divorce process reduces deep, restorative sleep.

However, divorce is an imperfect proxy for how individuals perceive the quality of their relationship. In the close relationship literature, the subjective experience of the marriage (or other close relationship) is typically referred to as "marital/relationship quality" or "marital/relationship functioning".[7] Given the dyadic (pairing of two individuals) nature of sleep for most adults, there has been surprisingly little investigation of the influence of close relationship quality on sleep or conversely, the impact of sleep disturbance on close relationship quality.

Evaluating sleep and sleep disorders from a dyadic perspective is important for several reasons. First, according to the 2005 National Sleep Foundation poll, 61% of adults sleep with a significant other, and one-quarter to one-third of married or cohabitating adults report that their intimate relationships are adversely affected by their own or their spouse's excessive sleepiness or sleep problems. Recent qualitative studies from interview data suggest that sleep problems in one or both partners, including insomnia symptoms and sleep-disordered breathing (SDB), contribute to marital problems.[8] In addition, Ulfberg and colleagues[9] found that women living with snorers were three times as likely to report symptoms of insomnia compared to women living with non-snorers, suggesting that a sleep disorder in one spouse may increase risk for a sleep disorder in the other spouse, perhaps leading to additive or synergistic effects on the relationship quality.

Second, spouses or intimate partners are a primary source of social control; i.e., they exert a powerful influence on their partner's adherence or compliance to medical regimens, including treatment for sleep disorders, such as obstructive sleep apnea (OSA[10]). Indeed, bed-partners play a prominent role in the diagnosis of sleep disorders, including OSA, which has been referred to as "a disease of listeners".[11] Such a label connotes not only the importance of including the bed-partner as an important source of corroborating data in the initial sleep evaluation, but also suggests that OSA is a disease that exacts a toll on the dyad, not just the patient. Therefore, including partners as active participants in sleep medicine interventions may improve compliance and cost-effectiveness of sleep treatments.

Third, life events such as the transition to parenthood[12] or adjustment to illness (e.g.,[13,14]) are known to cause sleep impairments and precipitous declines in marital quality, suggesting that sleep quality may play a critical role in the trajectory of marital functioning. Despite the temporal concordance between life events associated with sleep disturbance and declines in marital quality, there has been scant study of the degree to which sleep disturbance precipitates changes in marital functioning following such life transitions (for an exception see[15]).

Finally, consideration of sleep may elucidate key pathways through which close relationships ultimately influence physical health and well-being. Marital quality predicts a diverse array of physical health outcomes, including cardiovascular diseases, chronic pain, and infectious illnesses.[16] The potential mechanisms linking marital quality with health include behavioral (e.g., exercise, adherence to medical regimens), neuroendocrine, cardiovascular, and immune pathways. These traditional biopsychosocial mechanisms account for some, but not all of the association between marital quality