

## B. Clinical Sleep Science - III. Sleep Disorders - Insomnia

**Conclusion:** Cancer patients experience multiple symptoms which seem to be interrelated. CBT for insomnia results in generalised improvements in sleep and in these other symptoms, lending support to the notion of shared common pathways.

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### 0611

#### SLEEP IN CANCER CAREGIVERS: WHAT WE KNOW AFTER A DECADE OF RESEARCH

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**Introduction:** Sleep is an essential physiologic need that allows the body to restore and rebuild. Unfortunately, for those providing care to a loved one with cancer, sleep is often sacrificed. This year 1.5 million people will provide care to someone with cancer. Caregivers report debilitating insomnia and depression symptoms, and poor quality of life. Researchers have described caregiver sleep, depression, and quality of life, and the relationships between these phenomena, and have developed interventions to improve sleep, mood, and quality of life of caregivers. We present the findings of nearly a decade of research dedicated to generating this knowledge.

**Methods:** We reviewed available English language empirical reports about sleep, depression and quality of life in family caregivers of persons with cancer. Computerized database searches included Medline PubMed, CINAHL, and PsycINFO from 1999-2009. Search terms included sleep; sleep disturbance; insomnia; caregivers; family caregivers; cancer.

**Results:** A total of 21 papers were examined, major findings and conceptual issues identified. Major findings include: 1) caregivers report moderate to severe insomnia and depressive symptoms and poorer quality of life than do non-caregivers, 2) caregiver insomnia is more closely linked to caregiving stressors than to patient symptoms, 3) caregiver insomnia, depression, and quality of life scores show great variability over time, 4) family caregivers of persons with cancer do not use many of the pharmacological and behavioral therapies available, and 5) modified behavioral therapies for insomnia show some promise in improving caregiver insomnia, depression, and quality of life.

**Conclusion:** Many questions have been answered about sleep, depression, and quality of life in cancer caregivers; however, there is still work to be done. Conceptual issues of variable definitions, study design, and instrumentation must be addressed. In order to design interventions to address the complex issues faced by family caregivers, we must use a multi-discipline approach.

### 0612

#### UNDERSTANDING NON-REFRESHING SLEEP IN ADULTS WITH SLEEP APNEA

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**Introduction:** Non-refreshing sleep (NRS), the experience of feeling noticeably unrested upon awakening in the morning, is common in patients with sleep apnea as well as in a variety of other disorders. NRS lacks a uniform definition and its causes are unclear. To properly assess and, ultimately, treat this condition it is necessary to better understand the construct. Currently, the American Psychiatric Association (DSM-IV-TR) nosology considers NRS part of the insomnia diagnosis. But is NRS merely another manifestation of nocturnal sleep problems? Should it be considered a separate disorder?

**Methods:** Ninety-eight individuals with diagnosed, but as yet untreated, sleep apnea completed measures allowing us to diagnose difficulty initiating and maintaining sleep (DIMS) insomnia as well as how refreshed they felt upon awakening.

**Results:** Seventy-one percent of the 41 participants who had DIMS insomnia also had NRS. Of the 57 who did not have DIMS, half did (49%) and half did not (51%) experience NRS. The chi-square test shows that DIMS insomnia and NRS are associated,  $X^2(1, 08) = 4.78, P = .032$ . Although it may be intuitively obvious that people who report not sleeping well would feel unrefreshed in the morning, the finding that 28 participants, almost a third of the sample, felt unrefreshed in the absence of DIMS suggests that NRS may have causes other than poor sleep.

**Conclusion:** In a sample of close to 100 individuals with newly diagnosed sleep apnea, 30% of participants suffered neither from insomnia nor NRS. That even sleep apnea compounded by DIMS is only variably associated with NRS highlights the importance of investigating: (1) the nature and correlates of NRS, (2) characteristics of individuals who have NRS in the absence of subjectively poor sleep, and of those who are either (3) vulnerable or (4) resistant to the experience.

### 0613

#### NON-REFRESHING SLEEP IN APNEA PATIENTS WITHOUT INSOMNIA

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**Introduction:** Non-refreshing sleep (NRS) is commonly associated with Apnea particularly in the presence of difficulty initiating or maintaining sleep (DIMS). In apnea patients without DIMS, only 50% manifest NRS. Is NRS, then, linked to daytime phenomena, such as psychological adjustment, sleepiness and fatigue rather than apnea-related sleep fragmentation?

**Methods:** Participants were recently diagnosed with sleep apnea and had not yet started treatment. Individuals who had DIMS were excluded from the sample. Twenty-eight participants with and 29 without NRS completed a questionnaire battery including measures of sleepiness and fatigue (Empirical Sleepiness and Fatigue Scales, SF-36 Vitality Scale) and psychological adjustment (Beck Depression Inventory (BDI-II), Spielberger State-Trait Anxiety Inventory (STAI), SF-36 Mental Health Scale). Participants were classified as having NRS according to Ohayon and Roth's definition: Complaint of NRS at least 3 times a week, within normal sleep duration (Stone et al., 2008).

**Results:** Comparing scores on the three sleepiness/fatigue measures showed a significant finding on the SF-36 Vitality Scale (worse for NSR), a trend toward significance on the Empirical Sleepiness Scale (worse for NRS) and nonsignificant results on the Empirical Fatigue Scale. On the three measures of psychological adjustment, results show a significant finding on the SF-36 Mental Health Scale (worse scores for participants with NRS), a trend toward significance on the STAI, and nonsignificant results on the BDI-II. Because these measures may be correlated, we also carried out a discriminant analysis with NRS as the outcome. Only the SF-36 Vitality subscale contributed significantly to the prediction of NRS.

**Conclusion:** In the absence of DIMS insomnia, the Vitality Scale of the SF-36 quality of life measure (full of pep, having a lot of energy, and not feeling worn out or tired) is associated negatively with NRS. This finding helps to clarify the construct of NRS. Additional research on NRS and its conceptualization is urgently needed.