Cultural Considerations and Sleep

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There is well-documented racial, ethnic, and socioeconomic health disparities with both non-White and other socioeconomically disadvantaged populations shown to have worse outcomes across a range of health problems (Adler & Rehkopf, 2008; Center for Disease Control and Prevention, 2011; Smedley, Stith, & Nelson, 2003). The reason for the health disparities is likely facilitated by a combination of physiological, structural, and behavioral differences across populations (Adler & Rehkopf, 2008; Smedley et al., 2003). Understanding the causes of health disparities across racial/ethnic groups is an important public health cause. One of the important health disparities to address is poor sleep quality or insufficient sleep. A report from the Institute of Medicine identified "sleep deprivation and sleep disorders," as a major unmet public health problem and American health crisis (Colten & Altevogt, 2006; Office of Disease Prevention and Health Promotion, 2011).

Insomnia, described by problems falling asleep and/or maintaining sleep is a very common problem impacting nearly 60 million people with significant health-care costs and burden (Center for Disease Control and Prevention, 2011). Obstructive sleep apnea defined by pauses in breathing during sleep and excessive daytime sleepiness is common and is associated with medical morbidities including heart disease and stroke (Monahan & Redline, 2011). Grandner et al. (2012) found that people who report poor health or complain of depressive symptoms are at higher risk for experiencing sleeping problems. Persons suffering from sleep disturbances are more likely to suffer from chronic health problems such as diabetes, obesity, chronic pain, heart disease, and gastrointestinal problems (Taylor et al., 2007). Women are more likely to report insomnia symptoms compared to men and 50% of adult's aged 65 and older report problems with sleep (Ohayon, 2002; Ohayon, Zulley, Guilleminault, Smirne, & Priest, 2001). These findings are important for persons from various ethnic/racial groups and/or from differing socioeconomic groups because this could place them at higher risk of chronic health problems. Cultural considerations and sleep problems are a specific area of significant health concerns, but sadly little is known of the effect of ethnicity on sleep. The 2003 National Institute of Health National Sleep Disorders Research Plan (NSDRP) showed reported differences in sleep architecture (i.e., stages of sleep) and major health disparities between different ethnic/racial groups. NSDRP showed that those who are socioeconomically disadvantaged are more likely to have poor sleep environments such as overcrowded or too hot or cold, which could negatively impact sleep.

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In regard to racial/ethnic disparities, studies have shown that they do exist in disturbed sleep (Gamaldo, McNeely, Shah, Evans, & Zonderman, 2015; Hale & Do, 2007; Stamatakis, Kaplan, & Roberts, 2007). African Americans report shorter sleep duration and reduced sleep quality compared to other racial groups (Mezick et al., 2008; Whinnery, Jackson, Rattanaumpawan, & Grandner, 2014). The Grandner et al. (2013) study found non-Hispanic Blacks had greater difficulty falling and staying asleep, whereas Hispanics were more likely to snore (possible sign of sleep apnea) compared to non-Hispanic Whites. In 2014, the Center for Disease Control and Prevention looked at short sleep duration in adults as defined as less than 7 h of sleep per 24-h period and found that short sleep duration was less common among respondents aged ≥65 years (26.3%) compared with other age groups. The age-adjusted prevalence of short sleep duration was higher among Native Hawaiians/Pacific Islanders (46.3%), non-Hispanic Blacks (45.8%), multiracial non-Hispanics (44.3%), and American Indians/Alaska Natives (40.4%) compared with non-Hispanic Whites (33.4%), Hispanics (34.5%), and Asians (37.5%). Short sleep prevalence did not differ between men and women.

Newer studies suggest that sleep disturbances such as undiagnosed sleep apnea and insomnia occur more frequently among racial/ethnic minorities. Chen et al. (2015) found that after adjustment for sex, age, and study site, African Americans were most likely to have short sleep duration of less than 6 h and more likely than Whites to have sleep apnea, poor sleep quality, and daytime sleepiness. Hispanics and Chinese were more likely than Whites to have sleep apnea and short sleep duration. Ford, Cunningham, Giles, and Croft (2015) found similar prevalence rates of insomnia in the National Health Interview Survey among Whites and Hispanics (approximately 19% for both), and other researchers have found higher rates for insomnia among Latinos. For example, Hispanic youth were significantly more likely to report insomnia symptoms (42.0%) than non-Hispanic White youth (30.4%) (Blank et al., 2015). Roberts, Roberts, and Chen (2000) reported that Hispanic youth after adjusting for age, gender, and socioeconomic status were at higher risk for insomnia than Caucasians. They also found that Hispanic, Central American, and African American youth were at a higher risk for hypersomnia than Caucasians. They concluded that minority status might impact the risk for developing sleeping problems. Further, pregnant Latinas are also substantially impacted by insomnia, and insomnia symptoms have been noted to be particularly high among Latinas with depression (Manber et al., 2013). Moreover, Latinos have been noted to report poorer sleep practices relative to African American and Asian students (Gaultney, 2010).

Loredo et al. (2010) reviewed the small literature on Latinos and sleep and indicated that the high prevalence of risk factors in Hispanics (i.e., obesity, diabetes, living in the inner city, use of alcohol, poor sleep hygiene) and the negative effects of acculturation, especially on the young, suggested that the prevalence of sleep-related disorders such as insomnia and sleep apnea is likely high among Hispanics. The literature also suggests that acculturation to the US lifestyle is positively related to sleep difficulties among this group (Manber et al., 2013; Seicean, Neuhauser, Strohl, & Redline, 2011). This has been supported in research that has identified that US-born Hispanic/Latina immigrants were more likely to report sleep complaints than their first-generation ethnic counterparts (Hale, Troxel, Kravitz, Hall, & Matthews, 2014). But still little is known on other important sleep variables in Hispanics such as sleeping habits, beliefs, or attitudes about sleep or knowledge of sleep disorders. This is because the majority of research has been obtained in non-Hispanic White populations and African Americans making it difficult to generalize to other racial groups (Loredo et al., 2010).

So given the high prevalence of sleep disorders in general, it is important to unravel why race and ethnicity differences exist within sleep. Grandner, Williams, Knutson, Roberts, and Jean-Louis (2016) proposed that race/ethnicity differences exist regarding sleep in that differing social and environmental factors may play a role in different beliefs and attitudes about sleep. Adenekan et al. (2013) proposed that psy-

chosocial factors such as employment and finances have role in sleep disparities in the USA, but also suggested that genetics or socioeconomic status could also be contributing variables that mediate the racial differences seen in health risk related to sleep. For instance, differential anatomic risk factors among racial groups have indicated possible racial differences in the genetics of sleep (Buxbaum, Elston, Tishler, & Redline, 2002; Matthews et al., 2010; Villaneuva, Buchanan, Yee, & Grunstein, 2005). African Americans with depression are shown to have more stage 2 sleep, longer latency to rapid eye movement (REM) sleep, and less REM sleep than White counterparts (Giles, Perlis, Reynolds, & Kupfer, 1998). These data imply that racial ethnic factors and genetic factors may impact sleep related outcomes (Giles et al., 1998). However, still more research needs to be done to clarify the relationship between sleep and/or sleep architecture among different ethnic populations.

The social-ecological model of sleep and health (first presented by Grandner et al. (2010)) describes how sleep is determined by individual-level factors, which are embedded within social-level factors, which themselves are embedded within societal-level factors. This is suggesting that our individual beliefs and behaviors are entrenched within the aspects of the environment including our individual culture suggesting that sleep is not only a physiological experience but also a social and cultural experience as well (Grandner et al., 2012) This may be the reason to why sleep varies widely among cultures and ethnicities. Take, for instance, bed sharing and co-sleeping with children and other family members, which varies about cultures and also ethnic groups. Sleeping with a young child or aging parent could impact individual sleep patterns and may be associated with lower incomes. Those in poverty are more likely to report sleep problems, compared to those not in poverty (Grandner et al., 2010; Patel, Grandner, Xie, Branas, & Gooderatne, 2010). This is because of crowded living environments, longer or more demanding work schedules, and/or lack of access to quality health care, which can also impact sleep if the person cannot receive appropriate treatment in the case of sleep apnea.

Grandner et al. (2013) found that those with household income less than $20,000 were more likely to report multiple symptoms of sleep disorders. It was suggested that changes in sleep are not related to income, but rather what the income can buy for that family. So that may mean better access to health care, better neighborhoods, and healthier sleep environments that are associated with higher incomes may have an impact on sleep. If various ethnic groups are likely to have lower incomes or live in poverty compared to Caucasian, this may create a health disparity across race based on socioeconomic status that needs to be addressed.

Few studies have examined beliefs and attitudes about sleep that differ across race/ethnic groups (Grandner et al., 2016). The few studies that have been conducted looked at beliefs and attitudes in African Americans have shown that African Americans with a high risk of obstructive sleep apnea had higher scores on the dysfunctional beliefs and attitude scale compared to those who were not at a high risk (Pandey et al., 2011).

Less work has been done in Hispanics and Latino groups, but sleep knowledge has been evaluated among Mexican Americans and found that similar rates of knowledge were seen for insomnia (Sell et al., 2009). It is likely that a number of factors may impact ethnic/racial differences in sleep-related beliefs and sleep knowledge. Grandner et al. (2016) suggested that socioeconomics, differences in work/home/neighborhood environments, acculturation, bedroom environment including bed sharing, access to health care, trust in medical professionals, or traditional medicine all may play a role in impacting sleep beliefs and behaviors. For instance, the role of the physical environment likely differ among race/ ethnicity. This includes the home environment, but also work environment as well. In the home, more crowded households tend to be associated with insufficient sleep, and co-sleeping likely impacts sleep quality negatively (Grandner et al., 2016). Sleep may

be more of a luxury given the socioeconomic demands and one must consider the impact of shift work as ethnic minorities are more likely to work longer hours and work more jobs compared to non-minorities. Unlike physicians or military that may also work around the clock, these positions usually come with better access to health care. In the case of minorities, their work schedules may be the case of not having better options and their long work hours and schedules likely impact their opportunities for sleep. Further, they are more likely to work physically demanding jobs, and it has been shown that individuals with more manual labor jobs are more likely to report shorter sleep durations (Barilla, Corbitt, Chakravorty, Perlid, & Grandner, 2013).

Given the complexity of sleeping problems in ethnic minorities comes the even greater challenge of identifying the problem and prescribing treatment. Making the diagnosis of a specific sleep disorder is based on patients' subjective report of the sleeping problem and the judgment of the clinician. Thus, it is important that clinicians can recognize the difference between acute sleep problems and more chronic sleeping problems such as insomnia and sleep apnea, which commonly occur together. Historically, the most common approach to treatment of sleep disturbance is often prescription medications, but this comes with a cost for the consumer. The concern is not only the fact that sleep aids have side effects, such as memory loss, drowsiness, dizziness, and loss of coordination and balance (especially in elderly), but in some cases they may only work slightly better than a placebo (The Truth About Sleeping Pills, 2015). Sleeping aids should generally be used for short-term use (few weeks), but people are often using them for years, thus becoming dependent on them and increasing their risk for other health problems. The primary concern is sleeping medications do not treat underlying sleep disorders such as sleep apnea and often exacerbate the problem and daytime sleepiness symptoms.

If clinicians suspect sleep apnea may be contributing to sleep disturbance, depending on the person's access to medical care, a referral for a sleep study or polysomnography (PSG) may be needed to make the diagnosis. The PSG is usually ordered by a medical provider with specialized training in sleep medicine and is a comprehensive recording of the biophysiological changes that happen during sleep. It is usually performed at night in a sleep lab and monitors brain activity (EEG), heart rhythm (ECG), eye movements (EOG), and muscle activity (EMG) during sleep. PSG is needed to make a diagnosis of sleep apnea, and if apnea is found, the treatment is most commonly the CPAP or continuous positive airway pressure. Sadly, the rates of CPAP compliance only range from 30% to 60% despite numerous advances in machine dynamics such as improved comfort in masks and quieter pumps (Weaver & Grunstein, 2008; Weaver & Sawyer, 2010). Minorities and low SES populations may be a higher risk for more severe sleep apnea than affluent populations possibly related to increased exposure to environmental toxins. Of concern is the rates of CPAP compliance can be even lower in ethnic minorities. Billings et al. (2011) found that CPAP adherence differed significantly by race at 3 months but not by other social factors such as education, employment, and marital or smoking status. They found that African American had a significantly lower nightly use of CPAP suggesting that inequities remain despite attempts to standardize treatment. More research is needed to better understand difference in CPAP use among various ethnic groups so appropriate interventions can be designed to improve adherence rates in at-risk populations.

If insomnia persists, sleeping medications are no longer considered the recommended treatment, but rather a treatment called cognitive behavioral therapy for insomnia (CBT-I). Both the American Academy of Sleep Medicine (AASM) and the American Academy of Family Physicians recommend the use of cognitive behavioral therapy for insomnia (CBT-I) as the leading treatment (Qaseem, Kansagara, Forciea, & Cooke, 2016). This recommendation is based on the review of trials from 2004 to 2015 that compared CBT-I treatment to medications with CBT-I being found to be the more effective and safer treatment option. Research has shown that

the use of CBT-I has equal or greater effectiveness when compared to medications in the short term, but over time CBT-I has been shown to be more effective and have more durable effects (Morin, Colecchi, Stone, Sood, & Brink, 1999).

CBT-I goes beyond general sleep hygiene such as avoiding alcohol, not watching television in bed, etc., and addresses the key behaviors and thoughts that can interfere with sleep. Treatment includes several behavioral interventions of sleep restriction, stimulus control, relaxation therapy, and cognitive therapy specifically aimed at insomnia. There are few known side effects of CBT-I besides the possibility of increasing daytime sleepiness associated with sleep restriction therapy. But compared to medications, the side effects are significantly less and people often no longer need medications following treatment, thereby eliminating all potential drug side effects.

CBT-I can be delivered in an outpatient mental health setting, but also can be done within primary care clinics as well in as few as three to five sessions. Sadly, there are limited qualified clinicians trained in CBT-I and even further limitations when you consider ethnicity and cultural factors in sleep. It is very difficult to find a CBT-I therapist in general yet alone a therapist who can speak various languages and also aware of cultural factors in sleep. Further, the research on ethnicity and CBT-I is very limited. A PsycINFO search using the terms insomnia and Hispanic or Latino yielded only 52 publications. The majority of those publications was focused on psychotropic medication and/or is irrelevant to insomnia among Latinos; none of the manuscripts reviewed discussed the use of CBT-I with Latinos. Nonetheless, there is evidence to suggest that standard CBT generalizes to Latinos (Benuto & O'Donohue, 2015) indicating that the active ingredients in CBT-I may generalize to Latinos and other ethnicities as well. Given the substantial prevalence rates of sleep-related difficulties among minority groups, interventions for treating these difficulties are needed. Complexities aside, the literature clearly indicates that insomnia is a highly treatable condition via the use of CBT-I. While the research regarding sleep-related difficulties among various ethnic groups and CBT-I treatment is needed, it is clear these populations need interventions targeted at sleep-related difficulties probably even more than the general Caucasian population.

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