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Sleep and sleep knowledge among social work students: Implications for mental health and self-care education

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ABSTRACT

Obtaining good quality sleep is crucial to mental health. Social work students might be particularly vulnerable to mental health challenges and insufficient sleep, which can have important implications for self-care education. Examining social work students' sleep characteristics (i.e. sleep duration and sleep quality) and health knowledge gaps can provide an important context for promoting healthy sleep among social work students. Nonetheless, the empirical literature lacks such data. The purpose of this study was to employ a sample of undergraduate and graduate social work students to: 1. assess sleep duration and sleep quality; 2. quantitatively and qualitatively examine knowledge about sleep and healthy sleep behaviors; and 3. identify sleep health knowledge gaps. Twenty-five social work students completed validated assessments and participated in a semi-structured focus group. Quantitative and qualitative data highlight poor sleep duration, poor sleep quality, and sleep health knowledge gaps among this population. Data also reveal that while students recognize the importance of sleep, they have difficulty obtaining adequate sleep due to various contextual constraints. These data support the importance of including sleep health in self-care education among social work students and highlight sleep health knowledge gaps that could be integrated into self-care education.

KEYWORDS

Sleep health; sleep hygiene; sleep; self-care; social work student; mental health

Introduction

Mental health of social work students

Social workers, including social work students in field placements, often encounter clients with complex needs in stressful and demanding clinical contexts (Griffiths et al., 2019; Jackson, 2014; Miller et al., 2017; Posluns & Gall, 2020; Ting, 2011). Consequently, clinician burnout, compassion fatigue, and mental health struggles are known concerns in the social

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work profession (Adams et al., 2006; Posluns & Gall, 2020, Dalphon, 2019). In one study of 215 undergraduate social work students, over half of the students demonstrated clinically significant levels of depression symptoms (Ting, 2011). Another study found that among a sample of 68 undergraduate and graduate social work students, 6% of students met the criteria for post-traumatic stress disorder, 34% experienced clinically significant symptoms of depression, 36.8% reported lifetime suicidal ideation, 11.8% had attempted suicide, and 4.4% reported current suicidal ideation (Horton et al., 2009).

Self-care is a critical mechanism that can promote better mental health and combat stressful occupational demands; practicing self-care is also a professional, ethical responsibility. Self-care comprises strategies that intend to promote overall well-being and stress reduction (Bloomquist et al., 2015; Griffiths et al., 2019), whereby education on the topic of self-care identifies certain activities and approaches to promote physical and mental health (Griffiths et al., 2019). Educating social workers about how to engage in better self-care practices is important to incorporate into social work training curricula and continuing education opportunities (Griffiths et al., 2019; Miller et al., 2017; Miller, 2020; Wilson, 2016). In fact, educating social work students to “cope with inevitable stressors and an increasingly challenging practice context, in tandem with limited and diminishing resources” has been determined to be crucial in social work education (Iacono, 2017, p. 454).

Sleep and self-care among social work students

Including sleep health in self-care education is important because sleep is an essential component of mental health. Poor sleep, including fragmented sleep and total sleep duration of fewer than six hours per night, has been associated with an increased risk of depression, anxiety, suicidal ideation, suicidal behaviors, and substance use disorders (Alvaro et al., 2013; Baiden et al., 2020; Bernert et al., 2015; Johnson & Breslau, 2001; Littlewood et al., 2019).

Sleep is a modifiable health behavior that can impact mental health and well-being (Wickham et al., 2020). Healthy sleep behaviors, sometimes termed “sleep hygiene,” are modifiable daytime and bedtime behaviors as well as environmental factors that promote or inhibit sleep (Hauri, 1977). [Please note, hereinafter, we use the term “healthy sleep behaviors” instead of “sleep hygiene”]. Practicing healthy sleep behaviors, such as reducing alcohol and caffeine intake near bedtime, following a consistent sleep schedule, and creating a relaxing and restful sleep environment, have been associated with better sleep quality (Brown et al., 2006; Chung et al., 2018). Importantly, practicing healthy sleep behaviors has been associated with improvements in mental health outcomes, including self-regulation and depressive symptoms (Barber et al., 2014; Peach et al., 2016; Scott, 2021). The American Academy of Sleep Medicine (AASM, 2020) has published a comprehensive list of sleep health recommendations (Table 1) that could be an important component in sleep health and self-care education.

Many adults sleep fewer than six hours per night, even though research indicates seven to nine hours is ideal for optimal health (Hirshkowitz et al., 2015; Liu et al., 2016). College and graduate students are disproportionately more likely to report inadequate sleep. It is estimated that between 50.9 and 60.4% of college students experience poor sleep quality (Cates et al., 2015; Humphries et al., 2022; Lukowski et al., 2021). Young adults, regardless of college attendance, also report higher rates

Table 1. AASM healthy sleep recommendations.

Keep a consistent sleep schedule. Get up at the same time every day, even on weekends or during vacations.
 Set a bedtime that is early enough for you to get at least 7 hours of sleep.
 Don't go to bed unless you are sleepy.
 If you don't fall asleep after 20 minutes, get out of bed.
 Establish a relaxing bedtime routine.
 Use your bed only for sleep and sex.
 Make your bedroom quiet and relaxing. Keep the room at a comfortable, cool temperature.
 Limit exposure to bright light in the evenings.
 Turn off electronic devices at least 30 minutes before bedtime.
 Do not eat a large meal before bedtime. If you are hungry at night, eat a light, healthy snack.
 Exercise regularly and maintain a healthy diet.
 Avoid consuming caffeine in the late afternoon or evening.
 Avoid consuming alcohol before bedtime.
 Reduce your fluid intake before bedtime.

*Sleep hygiene recommendation by the American Academy of Sleep Medicine (AASM) (<http://sleepeducation.org/essentials-in-sleep/healthy-sleep-habits>).

of inadequate sleep than other age groups (Ford et al., 2015). In the past decade, the percentage of adults experiencing excessive sleepiness and insomnia symptoms significantly increased from 9.8% to 12.7% and from 17.5% to 19.2%, respectively, with marked increases for young adults between 18–34 years old (Ford et al., 2015).

To the best of our knowledge, there is only one published investigation of sleep specifically among social work students. This recent study ($N = 196$) found that approximately 70.4% of master's social work students reported poor sleep quality (Lee et al., 2022). These data, coupled with the known associations between sleep health and mental health (Alvaro et al., 2013; Bernert et al., 2015; Johnson & Breslau, 2001; Littlewood et al., 2019) highlight the need to further target sleep health among this population.

Since sleep health practices are a modifiable behavior and an essential component of improved sleep outcomes and mental health, sleep health education should be considered an important component of self-care. Nonetheless, sleep health might be infrequently addressed in self-care education among social work students. Currently, most of the self-care empirical literature focuses on mindfulness (Griffiths et al., 2019). Moreover, to our knowledge, only one published investigation of self-care education mentioned sleep (i.e., Miller, 2020). Miller (2020) developed and assessed a self-care course to promote professional and personal self-care. Obtaining adequate sleep was a sub-domain that was included within the personal self-care domain, and students showed improved personal self-care at posttest (Miller, 2020).

The social work literature lacks investigations of sleep including social work students' sleep characteristics and sleep health knowledge. Examining social work students' sleep, sleep beliefs, and sleep knowledge can provide an important context for self-care education as well as add to the limited empirical investigations of sleep among social work students. These data can provide an important foundation for sleep health education in the social work field. Additionally, they may inform the development of interventions that incorporate healthy sleep as an essential component of self-care to enhance wellness and reduce burnout among social work students.

Current study

To address these gaps in the scientific literature and to provide important insights into social work student sleep health education, this article represents the first in-depth examination of sleep and sleep knowledge among social work students. Specifically, the present study utilized qualitative and quantitative methods to examine the social work students': 1. sleep duration and quality; 2. knowledge of sleep and healthy sleep behaviors; 3. gaps in sleep health knowledge.

Materials and methods

Study design

We used a mixed-methods descriptive design (quantitative and qualitative; Creswell & Plano Clark, 2011) to investigate students' sleep duration, sleep quality, knowledge of healthy sleep behaviors, and overall perceptions of sleep. This study was a part of a larger study conducted to inform the development of a sleep health training course for social work students (C. Spadola et al., 2022).

Recruitment

Students enrolled in the bachelor's (BSW) or master's (MSW) program of social work at a public university in the southeastern U.S. were invited to participate in the study via a university listserv. After providing informed consent, participants were scheduled to participate in one of three focus groups of their choosing. Participants received a \$20 gift card for their participation. All procedures were approved by the university's Institutional Review Board (IRB#1364364).

Data collection

Participants first completed questionnaires inquiring about demographics, sleep quality, and sleep beliefs. Subsequently, they participated in a semi-structured focus group. The demographics survey collected information on participants' self-identified gender, race/ethnicity, and program level (BSW or MSW).

Pittsburgh sleep quality index

The Pittsburgh Sleep Quality Index (PSQI; Buysse et al., 1989) is a 19-item questionnaire to assess participants' past 30-day sleep characteristics including sleep duration and sleep quality. The PSQI also produces a "global score" which is an assessment of overall sleep quality and is based on seven domains: 1. sleep quality; 2. time spent trying to fall asleep (sleep onset latency); 3. sleep duration; 4. sleep efficiency (time spent in bed trying to sleep vs. time actually sleeping); 5. sleep disturbances and fragmentation (night awakenings); 6. use of sleep medications; and 7. daytime functioning related to the prior night's sleep. The PSQI global score ranges from 0–21; a score of less than 5 is considered good sleep quality, and 5 or above is poor sleep quality. The PSQI is widely used and recognized as a valid and reliable subjective assessment of sleep (Buysse et al., 1991; Gellis & Lichstein, 2009).

Sleep beliefs scale

We used the Sleep Beliefs Scale (SBS; Adan et al., 2006) to assess sleep health knowledge. The SBS is a 20-item measure that asks participants to determine whether healthy sleep behaviors (e.g., consuming alcohol close to bedtime) have a positive, negative, or neutral effect on sleep. The SBS is designed to assess *knowledge* of healthy sleep behaviors, not the participant's personal behaviors. Scores on the SBS range from 0–20, with a higher score indicating more sleep health knowledge. Of note, the SBS includes a question on vigorous exercise before bed, and the “correct” answer is that this can have a negative impact on sleep. Conversely, recent research has revealed that overall exercise can improve sleep, unless it is vigorous and less than one hour before bed (see review: Stutz et al., 2019). Thus, we do not include the avoidance of exercise close to bedtime as an educational implication for social work students.

Focus groups

Three in-person focus groups were conducted with a total of 25 students. Groups had six to eleven students per group; group size was based on convenience (scheduling and availability of participants). The lead authors (CS, DG) moderated the focus groups. The moderators utilized a semi-structured interview guide, developed by the study author team, to qualitatively explore student perceptions of sleep. Focus group questions included the perceived importance of sleep and factors that influence sleep (e.g., “How important do you feel adequate sleep is for overall health and well-being?,” “How confident are you in your knowledge of various strategies/behaviors to improve sleep?”). Focus groups were audio recorded and transcribed verbatim.

Data analysis

Stata software (Release 15, StataCorp, 2017) was used to calculate descriptive statistics for the quantitative data (sleep duration, sleep quality, PSQI global score, and sleep beliefs score). Qualitative data analysis occurred in two steps. First, a thematic analysis approach was used to analyze the semi-structured focus groups for themes surrounding beliefs about sleep. The lead authors independently open-coded all three transcripts. After both authors developed their own coding structures, they met to discuss and compare their codes. From this meeting, an initial codebook was created based on a merging of the two sets of codes. Next, each author independently coded a transcript using NVivo (QSR International Pty Ltd, 2020). After completing the coding of the transcript, the authors used NVivo to calculate inter-coder agreement, and any codes that fell below a strong kappa score (0.83; McHugh, 2012) were discussed and clarified. The codebook was further refined, and the authors repeated this process until both authors were able to independently code a transcript and have strong kappa scores across all codes. After, the second author (DG) re-coded the remaining two interviews independently using the final code book.

To further examine sleep knowledge as well as opportunities for future education, the authors conducted a deductive, directed content analysis (Hsieh & Shannon, 2005) to examine the qualitative data in the context of the AASM's published sleep health recommendations. The authors also placed the results from the Sleep Beliefs Scale within the

context of the AASM sleep health recommendations (Table 1) to highlight false beliefs. Table 2 presents a synthesis of the qualitative and quantitative data on sleep knowledge in the context of sleep health recommendations.

Results

Participants

Participants' ages ranged from 18–56, with a mean age of 27.8 (SD = 11.5 years). Over half of the sample identified as racial/ethnic minority (28.0% African American, 16.0% Hispanic, 8.0% other), and 48.0% identified as non-Hispanic white. Most students (56.0%; $n = 14$) were enrolled in the MSW program and 44.0% ($n = 11$) were enrolled in the BSW program.

Quantitative data

Twenty-three (23) students completed the PSQI. Most participants (60.8%, $n = 14$) reported sleeping six (6) hours or less on an average night, with an average of 5.95 hours of sleep per night in the past 30 days (SD = 1.68). The global sleep quality score was 8.77 (SD = 3.98), with 81.8% ($n = 18$) of participants classified as having poor sleep quality (PSQI ≥ 5).

Participants demonstrated a moderate knowledge of healthy sleep behaviors with an average score of 13.88 (13.88 \pm 2.7 out of 20) on the SBS (Adan, 2006). The second column in Table 2 details the responses on the SBS. Some aspects of healthy sleep behaviors appeared to be understood by most students. For example, drinking alcohol and caffeine in the evening were identified as having a negative effect on sleep by 76% ($n = 19$) and 96% ($n = 24$) of participants, respectively. The majority of participants (88%, $n = 22$) correctly identified relaxing before bedtime as a healthy sleep behavior, and 96% ($n = 24$) identified sleeping in a quiet and dark room as a healthy sleep behavior. However, while most participants (84%; $n = 21$) identified that going to bed and waking up consistently at the same hour constituted healthy sleep behaviors, only 60% ($n = 15$) of participants identified that going to bed two hours earlier than their habitual sleep time could negatively impact sleep.

Qualitative data

Theme 1: Importance of sleep

Participants in all three focus groups recognized the importance of sleep, and sleep was deemed critical to overall functioning and productivity. As one participant stated: "Sleep is right up there with food—sleep deprivation is a form of torture." Students described the negative implications of insufficient sleep. Two participants commented that they would likely skip events without a good night's sleep, and "[I] won't be ready for my day." Sleep was described as a "game changer," and another participant stated that without sleep "my focus, especially in class, is definitely off." One participant provided a particularly alarming account of the implications of sleep deprivation:

Table 2. AASM healthy sleep recommendations in the context of quantitative and qualitative data.

AASM recommendation*	Quantitative data (SBS)**: "Does this behavior have a positive, negative or neutral effect on sleep?" % correct (n)	Qualitative data: Exemplar quotes from focus groups
Keep a consistent sleep schedule. Get up at the same time every day, even on weekends or during vacations.	<ul style="list-style-type: none"> • Going to bed and waking up always at the same hour 84% (21) • Going to bed 2 hours earlier than the habitual hour 68% (17) • Recovering lost sleep by sleeping for a long time 36% (9) 	"It's important for [children] to stay on a schedule. Like I should be on a schedule. So why would it be important for a child to have a schedule and not a high-schooler, an adult, ..."
Set a bedtime that is early enough for you to get at least 7 hours of sleep.	<ul style="list-style-type: none"> • Studying or working intensely until late night? 84% (21) 	<p>"Most of the time I have the time to sleep, I just want to do other stuff, so like forcing myself to get into my pajamas and just getting into bed, that will definitely help."</p> <p>"[if you've been going] to bed late, and getting up early, it's hard to change that pattern."</p> <p>"I started at a young age staying up late, and it's a pattern now. So now I'm in college, and it's just messed up."</p>
Don't go to bed unless you are sleepy.	<ul style="list-style-type: none"> • Trying to fall asleep without a sleep sensation 52% (13) 	
If you don't fall asleep after 20 minutes, get out of bed.	<ul style="list-style-type: none"> • Getting up when it's difficult to fall asleep 20% (5) 	
Establish a relaxing bedtime routine.	<ul style="list-style-type: none"> • Diverting one's attention and relaxing before bedtime 88% (22) • Thinking about one's engagements for the next day before falling asleep 68% (17) • Doing intense physical exercise before bed 29.17% (7) 	<p>"...we are going to read a book, we are going to take a bath, like having that routine every night and making sure you follow it [is beneficial for sleep]."</p> <p>"I started praying at night, and that is actually the only thing that can calm me enough to the point where I can relax, because I'm so anxiety-ridden otherwise, um, that my mind will keep racing, and racing, and racing."</p> <p>"... 30 minutes into trying to fall asleep I would get up and write myself notes for the morning, 'remember to print this out, remember to do this.'"</p> <p>"... your stress also contributes, so much to our sleep, I would close my eyes but I knew that I had so much stress that I couldn't fully rest."</p> <p>"whether it's schoolwork or I didn't do something for the next day, it's like I just worry."</p> <p>"I have a list of things in my notes to do for the day that I need to get done, and if that list is not completed by the time I go to bed, I'm very stressed out."</p>
Use your bed only for sleep and sex.	<ul style="list-style-type: none"> • Using the bed for eating, calling on the phone, studying and other non-sleeping activities 76% (19) 	
Make your bedroom quiet and relaxing. Keep the room at a comfortable, cool temperature.	[not assessed via the SBS]	"The easiest way for me to fall asleep is to be in a dark quiet room, any light would disturb me."

(Continued)

Table 2. (Continued).

AASM recommendation*	Quantitative data (SBS)**: "Does this behavior have a positive, negative or neutral effect on sleep?" % correct (n)	Qualitative data: Exemplar quotes from focus groups
Limit exposure to bright light in the evenings.	[not assessed via the SBS]	"Everyone's on [electronics] and. with the blue light, [you end up] just playing video games and maybe it's affecting the ability to get a good night's sleep."
Turn off electronic devices at least 30 minutes before bedtime.	[not assessed via the SBS]	"I think it's like the impact of social media or apps that [keep] you up all night." "..Even when you're sleeping and the TV is on .your mind is not at ease, it's not resting, it's constantly going." "..I'm trying to not look at my phone right before bed because otherwise it affects my sleep, it takes me longer to be more tired." "I sleep without my phone or my iPad. They would be in a different room and .that worked for a like a week because . . . it's really hard to break a habit when I've [had a phone with me in the bedroom] since I've gotten a phone."
Do not eat a large meal before bedtime. If you are hungry at night, eat a light, healthy snack.	<ul style="list-style-type: none"> • Going to bed immediately after eating 92% (23) 	
Exercise regularly and maintain a healthy diet.	[not assessed via the SBS]	
Avoid consuming caffeine in the late afternoon or evening.	<ul style="list-style-type: none"> • Drinking coffee or other substances with caffeine after dinner 96% (24) 	
Avoid consuming alcohol before bedtime.	<ul style="list-style-type: none"> • Drinking alcohol in the evening 76% (19) 	
Reduce your fluid intake before bedtime.	[not assessed via the SBS]	

*Sleep hygiene recommendation by the American Academy of Sleep Medicine (AASM). (<http://sleepeducation.org/essentials-in-sleep/healthy-sleep-habits>).

**As assessed via the Sleep Beliefs Scale (SBS).

I stay up really late because it's hard for me to fall asleep and I end up getting like one to two hours of sleep. I'll literally forget what I'm doing or what I said . . .that's not good because if I have to drive home . . .

Some students also discussed sleep in the context of physical well-being:

. . . if I don't have adequate sleep, my whole body, I just don't feel good . . . I get migraines, I feel dehydrated, I just feel completely off. I'm going to feel it really physically, um in addition to my attention in school or work, is just kind of garbage as well.

The importance of sleep for mental health was another theme that emerged, and the bidirectional relationship between sleep and mental health seemed to be acknowledged among some students. For example, "Lack of sleep, it can lead to depression" and "Sleep could impact anxiety and your ability to function throughout the day." Participants also noted the implications of suboptimal sleep on overall mood. For example, "My mood is

absolutely destroyed if I don't get enough sleep. I'm irritable, I'm not fun to be around. It's embarrassing honestly."

Theme 2: Factors that hinder sleep

Participants described postulated causes for inadequate sleep. One theme that emerged in two of the three focus groups was that poor sleep was influenced by a societal discourse that does not value sleep. As one participant stated, "[Lack of sleep] is like a badge of honor." Other participants corroborated this: "I think our culture as a whole doesn't value sleep, but we value lack of sleep." Another participant stated:

You know because you brag, "Oh man, I only had five hours last night," and "Where's my coffee?" and then you make jokes, and it's almost kind of like an endurance, kind of, "How little sleep can I still function on?"

One participant commented on social pressure surrounding a late bedtime: "you can't go to sleep before like ten [o'clock]." Participants also described how being a busy student can leave little time for sleep. For example: sleep is "a priority thing, where so many things are higher on the priority list, like school, and work, and friends . . ."

Another theme that emerged was stress. In all three focus groups, participants described the role of stress in interfering with sleep.

Stress also contributes a lot. . . When I was working at a very stressful job. . . I would close my eyes but I knew that I had so much stress that I couldn't fully rest.

Stress, specifically due to unfinished tasks, was also mentioned. For example: "I get in bed early, I feel like I'm not doing what I need to do. I just worry. . . about school work. . ." Similarly, another participant stated: "If that list [of tasks] is not completed by the time I go to bed, I'm very stressed out. That creates anxiety."

Technology as an impediment to sleep was a theme that emerged in two of the three focus groups. Several participants discussed their personal use of technology and recognized that limiting technology resulted in noticeable improvements in their sleep.

[When I was younger] I never had a TV in my room and I feel like when I was younger I always had better sleep than I do now. Now it's like I have my computer, so I'll watch like Netflix before I [go] to bed and I'll fall asleep with it on, and I feel like I used to get way better sleep than I do now so it's probably because of that.

One participant hypothesized: "So I think it's the impact of social media . . . that keeps you up all night." Another participant commented on the impact of blue light from handheld electronic devices: "Everyone's on screens and . . . with the blue light, [you end up] just playing video games, and maybe it's affecting the ability to get a good night's sleep." A third participant described how they did not have her phone in her bedroom for a week (for a class assignment) and noticed an improvement in sleep. Nonetheless, after the assignment was over, she remarked she "couldn't really have the discipline" to keep her phone out of the bedroom.

A few participants discussed maladaptive schedules that were implemented at an early age. For example, ". . . at the college level age or older, if you've been sleeping the same way like going to bed late and getting up early or whatever—in middle school, high school,

whatever it's going to be hard to change that pattern." Another participant corroborated the impact of a sleep schedule that was implemented in the early years: "I started at a young age staying up late, and like throughout the years, it just kept going, and it's a pattern now. It just messed me up."

Theme 3: Factors that promote sleep

Several participants discussed the impact of a relaxing bedtime routine to promote sleep, including list-making and prayer:

[Prayer] is actually the only thing that can calm me enough to the point where I relax, because I'm so anxiety-ridden otherwise um, that my mind will keep racing, and racing, and racing, and racing about who knows what.

Other relaxing bedtime activities that were described by participants included drinking decaffeinated tea, reading a book, and taking a bath.

The sleeping environment and medication were also discussed as sleep promotion strategies. One participant described the importance of a dark, quiet room and that "any light would disturb me." Another participant mentioned bedding and the importance of being comfortable with the mattress and pillow firmness. Only one participant mentioned using an over-the-counter sleeping pill and acknowledged, "it's not really good, I mean, although [taking a sleep pill is] kind of the culture."

Integrated quantitative and qualitative data

Table 2 lists sleep health recommendations set forth by the AASM and synthesizes the quantitative data from the SBS and the qualitative data from the focus groups within these recommendations. These findings are further elucidated in the discussion section.

Discussion

To the best of our knowledge, our work represents the first in-depth investigation of sleep and sleep knowledge among social work students. Our mixed-methods approach found that short sleep duration and poor sleep quality were prevalent, and our research documents the perceived detrimental impact of sleep deprivation as well as postulated causes for inadequate sleep. We also placed our qualitative and quantitative findings in the context of sleep health recommendations set forth by the American Academy of Sleep Medicine. Our data reveal important opportunities to integrate sleep education into models of self-care for social work students.

Inadequate sleep and poor sleep quality were reported by most of our sample. Our results are in line with the only other published investigation of sleep among social work students, which reported an average sleep duration of 6.6 hours per night and 70.4% with poor sleep quality (Lee et al., 2022). Our sample had an average PSQI global sleep score of 8.77 (SD = 3.98; <5 is considered good sleep quality). Our sample seemed to have lower sleep quality than university samples, as other studies investigating sleep among university students reported PSQI global sleep quality scores ranging from 5 to 7 (Cates et al., 2015; Humphries et al., 2022; Lukowski et al., 2021). The poorer sleep quality in our sample

might be representative of the complex needs of social work students and is further discussed below.

In terms of sleep health knowledge, the SBS score is comparable to another university sample (Levenson et al., 2017). Although participants demonstrate some understanding of sleep health, there are gaps in knowledge and misconceptions that are important to address. The qualitative data, quantitative data, and Table 2, which places the qualitative and quantitative data within the context of AASM's sleep health recommendations, reveal important themes and sleep health knowledge gaps that we will now further discuss and elucidate.

Understanding of the implications of poor sleep

The qualitative data illustrated participants' understanding of the negative implications of a poor night's sleep. Participants described poor mood, lack of focus, migraine headaches, and inability to attend events resulting from poor sleep. This is critical when considering social workers' professional responsibilities to their clients and notions of self-care to reduce burnout and promote professional efficacy. Alarming, one student described how she only gets one to two hours of sleep and drives home from work some nights. This finding is especially concerning as drowsy driving can be deadly, pointing to an important area for education and intervention (Owens et al., 2018; Tefft, 2014).

Stress related to poor sleep

Factors that were related to poor sleep among social work students were also elucidated in the qualitative data. Stress, commonly related to unfinished tasks, was one theme that emerged. Stress as a hindrance to sleep could be particularly salient to social work students due to course workloads and field placements that can be mentally draining and stressful. Prior research has found that employed social work students are more likely to experience stress and burnout (Benner & Curl, 2018). Similarly, Lee et al., (2022) found that 48% of MSW students had high levels of perceived stress, which was associated with poor sleep quality (Lee et al., 2022).

Nearly 70% of students in our study correctly agreed that thinking about one's engagements for the next day before falling asleep could have a negative impact on sleep. Yet, our qualitative data illustrate participants' difficulties with managing stress-reducing techniques prior to bedtime (e.g., "Whether it's schoolwork or I didn't do something for the next day . . . it's like I just worry"). This highlights the importance of social work curricula to implement time management and stress reduction techniques to address and establish relaxing bedtime routines to promote optimal sleep.

In thinking through ways to reduce stress, burnout, and occupational fatigue, social work supervisors and educators rely on self-care strategies, including activities such as mindfulness, meditation practices, exercise, and healthy eating habits. Our findings show that healthy sleep behaviors should be considered in conjunction with other self-care activities.

Sleep health knowledge gaps

Maintaining a consistent sleep schedule

Maintaining a consistent sleep and wake cycle is one of the most important aspects of sleep health as variability in sleep timing is associated with circadian disruption and maladaptive

mental and physical health (Abbott et al., 2019; Makarem et al., 2020; Slavish et al., 2019). Moreover, irregular bedtimes are associated with poorer academic performance (Phillips et al., 2017). While 84% of students recognized that “going to bed and waking up always at the same time” positively affected sleep, only 36% recognized that going to bed 2 hours earlier than the habitual hour had a negative impact. College students may be more likely to catch up on sleep during the weekends when their schedules are less busy but may not understand why attempting an earlier bedtime is difficult to achieve. Further, employed social work students and students in field placements might be especially at risk for erratic sleep patterns due to their overburdened schedules. Thus, educating students on how consistent sleep schedules can be a form of self-care can be especially relevant in promoting well-being and professional resilience.

Prioritizing sleep

Allowing a sleep opportunity for at least seven hours is another recommendation set forth by the AASM. While 84% of the sample recognized that studying or working intensely until late in the night could negatively impact sleep, our qualitative data reveal a lack of sleep prioritization (e.g., “I want to do other stuff”). Thus, future sleep health education should describe the benefits of obtaining adequate sleep, including improved mental health and physical health, academic functioning, and overall well-being to heighten quality client care. Moreover, invoking behavioral change frameworks could also help to alleviate the gap between knowledge and action.

Negative impact of alcohol consumption on sleep

Almost the entire sample believed drinking coffee or other caffeinated substances after dinner represented a negative impact on sleep. In comparison, only 76% recognized that avoiding alcohol before bed is important for sleep. Consuming alcohol as a “nightcap” or to help promote sleep is a common myth (Robbins et al., 2019). However, research consistently demonstrates that while alcohol might promote sleep onset initially, alcohol is associated with sleep fragmentation later in the night and has a negative overall impact on sleep (C. E. Spadola et al., 2019; Ebrahim et al., 2013).

Limitations

Our findings reveal important insights into social work students’ sleep beliefs, sleep knowledge, and sleep characteristics and provide an important framework for future sleep health promotion efforts targeted at social work students. Nonetheless, our findings need to be interpreted in the context of their limitations. Our study was designed to provide in-depth accounts of sleep and sleep knowledge among social work students. Thus, the relatively small sample size and subjective assessments of sleep (versus objective assessments such as polysomnography) might hinder the generalizability of our findings. We would also like to acknowledge that overall sleep health is a health equity issue (Hale et al., 2020), and that burnout is a pervasive problem among social workers (Gómez-García et al., 2020; Mack, 2022). Moreover, burnout is an especially pressing issue during the COVID-19 pandemic (Peinado & Anderson, 2020), and burnout is an essential consideration among social work students who are beginning to navigate the balance of self-care and professional responsibilities. Thus, social work

students' sleep health and overall wellness should be addressed by multi-level approaches, including systemic strategies to address burnout and promote physical and mental health. Future research should examine organizational and systemic approaches to integrate self-care into work and academic environments and alleviate individual burdens associated with self-care.

Conclusion

Considering that sleep is critical for mental and physical health, sleep stands to be a worthwhile target for self-care interventions to reduce social work burnout and increase well-being. Our participants seem to understand the negative connotations of poor sleep but report difficulties in obtaining adequate sleep due to further constraints, such as stress, the use of technology, school/work-related factors, and the societal pressure that devalues sleep. Understanding the state of sleep health knowledge among social work students may help to identify a key target of intervention to improve mental health and support social work students through their academic and professional careers.

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References

- Abbott, S. M., Weng, J., Reid, K. J., Daviglius, M. L., Gallo, L. C., Lored, J. S., Nyenhuis, S. M., Ramos, A. R., Shah, N. A., Sotres-Alvarez, D., Patel, S. R., & Zee, P. C. (2019). Sleep timing, stability, and BP in the Sueño ancillary study of the Hispanic Community Health Study/Study of Latinos. *Chest*, 155(1), 60–68. <https://doi.org/10.1016/j.chest.2018.09.018>
- Adams, R. E., Boscarino, J. A., & Figley, C. R. (2006). Compassion fatigue and psychological distress among social workers: A validation study. *The American Journal of Orthopsychiatry*, 76(1), 103–108. <https://doi.org/10.1037/0002-9432.76.1.103>
- Adan, A., Fabbri, M., Natale, V., & Prat, G. (2006). Sleep beliefs scale (SBS) and circadian typology. *Journal of Sleep Research*, 15(2), 125–132. <https://doi.org/10.1111/j.1365-2869.2006.00509.x>
- Alvaro, P. K., Roberts, R. M., & Harris, J. K. (2013). A systematic review assessing bidirectionality between sleep disturbances, anxiety, and depression. *Sleep*, 36(7), 1059–1068. <https://doi.org/10.5665/sleep.2810>
- American Academy of Sleep Medicine (2020, August). *AASM Education: Healthy Sleep Habits*. <https://sleepeducation.org/healthy-sleep/healthy-sleep-habits/>
- Baiden, P., Tadeo, S. K., Tonui, B. C., Seastrunk, J. D., & Boateng, G. O. (2020). Association between insufficient sleep and suicidal ideation among adolescents. *Psychiatry Research*, 287, 112579. <https://doi.org/10.1016/j.psychres.2019.112579>
- Barber, L. K., Rupperecht, E. A., & Munz, D. C. (2014). Sleep habits may undermine well-being through the stressor appraisal process. *Journal of Happiness Studies*, 15(2), 285–299. <https://doi.org/10.1007/s10902-013-9422-2>

- Benner, K., & Curl, A. L. (2018). Exhausted, stressed, and disengaged: Does employment create burnout for social work students? *Journal of Social Work Education, 54*(2), 300–309. <https://doi.org/10.1080/10437797.2017.1341858>
- Bernert, R. A., Kim, J. S., Iwata, N. G., & Perlis, M. L. (2015). Sleep disturbances as an evidence-based suicide risk factor. *Current Psychiatry Reports, 17*(3), 15. <https://doi.org/10.1007/s11920-015-0554-4>
- Bloomquist, K. R., Wood, L., Friedmeyer-Trainor, K., & Kim, H.-W. (2015). Self-care and professional quality of life: Predictive factors among MSW practitioners. *Advances in Social Work, 16*(2), Article 2. <https://doi.org/10.18060/18760>
- Brown, F. C., Buboltz, W. C., Jr., & Soper, B. (2006). Development and evaluation of the sleep treatment and education program for students (STEPS). *Journal of American College Health, 54*(4), 231–237. <https://doi.org/10.3200/JACH.54.4.231-237>
- Buysse, D. J., Reynolds, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh sleep quality index: A new instrument for psychiatric practice and research. *Psychiatry Research, 28*(2), 193–213. [https://doi.org/10.1016/0165-1781\(89\)90047-4](https://doi.org/10.1016/0165-1781(89)90047-4)
- Buysse, D. J., Reynolds, C. F., III, Monk, T. H., Hoch, C. C., Yeager, A. L., & Kupfer, D. J. (1991). Quantification of subjective sleep quality in healthy elderly men and women using the Pittsburgh sleep quality index (PSQI). *Sleep, 14*(4), 331–338. <https://doi.org/10.1093/sleep/14.4.331>
- Cates, M. E., Clark, A., Woolley, T. W., & Saunders, A. (2015). Sleep quality among pharmacy students. *American Journal of Pharmaceutical Education, 79*(1), 9. <https://doi.org/10.5688/ajpe79109>
- Chung, K.-F., Lee, C.-T., Yeung, W.-F., Chan, M. -S., Chung, E. W.-Y., & Lin, W.-L. (2018). Sleep hygiene education as a treatment of insomnia: A systematic review and meta-analysis. *Family Practice, 35*(4), 365–375. <https://doi.org/10.1093/fampra/cmz122>
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research*. Sage.
- Dalphon, H. (2019). Self-care techniques for social workers: Achieving an ethical harmony between work and well-being. *Journal of Human Behavior in the Social Environment, 29*(1), 85–95. <https://doi.org/10.1080/10911359.2018.1481802>
- Ebrahim, I. O., Shapiro, C. M., Williams, A. J., & Fenwick, P. B. (2013). Alcohol and sleep I: Effects on normal sleep. *Alcoholism, Clinical and Experimental Research, 37*(4), 539–549. <https://doi.org/10.1111/acer.12006>
- Ford, E. S., Cunningham, T. J., Giles, W. H., & Croft, J. B. (2015). Trends in insomnia and excessive daytime sleepiness among US adults from 2002 to 2012. *Sleep Medicine, 16*(3), 372–378. <https://doi.org/10.1016/j.sleep.2014.12.008>
- Gellis, L. A., & Lichstein, K. L. (2009). Sleep hygiene practices of good and poor sleepers in the United States: An internet-based study☆☆This work was supported by a grant from the University of Memphis, Department of Psychology. *Behavior Therapy, 40*(1), 1–9. <https://doi.org/10.1016/j.beth.2008.02.001>
- Gómez-García, R., Alonso-Sangregorio, M., & Llamazares-Sánchez, M. L. (2020). Burnout in social workers and socio-demographic factors. *Journal of Social Work, 20*(4), 463–482. <https://doi.org/10.1177/1468017319837886>
- Griffiths, A., Royse, D., Murphy, A., & Starks, S. (2019). Self-care practice in social work education: A systematic review of interventions. *Journal of Social Work Education, 55*(1), 102–114. <https://doi.org/10.1080/10437797.2018.1491358>
- Hale, L., Troxel, W., & Buysse, D. J. (2020). Sleep health: An opportunity for public health to address health equity. *Annual Review of Public Health, 41*(1), 81–99. <https://doi.org/10.1146/annurev-publhealth-040119-094412>
- Hauri, P. (1977). Sleep hygiene. In *Current concepts: The sleep disorders* (pp. 22–35). Kalamazoo, MI: The Upjohn Company.
- Hirshkowitz, M., Whiton, K., Albert, S. M., Alessi, C., Bruni, O., DonCarlos, L., Hazen, N., Herman, J., Adams Hillard, P. J., Katz, E. S., Kheirandish-Gozal, L., Neubauer, D. N., O'Donnell, A. E., Ohayon, M., Peever, J., Rawding, R., Sachdeva, R. C., Setters, B., Vitiello, M. V., & Ware, J. C. (2015). National sleep foundation's updated sleep duration recommendations: Final report. *Sleep Health, 1*(4), 233–243. <https://doi.org/10.1016/j.sleh.2015.10.004>

- Horton, E., Diaz, N., & Green, D. (2009). Mental health characteristics of social work students: Implications for social work education. *Social Work in Mental Health*, 7(5), 458–475. <https://doi.org/10.1080/15332980802467696>
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288. <https://doi.org/10.1177/1049732305276687>
- Humphries, R. K., Bath, D. M., Burton, N. W., & Cargo, M. (2022). Dysfunctional beliefs, sleep hygiene and sleep quality in university students. *Health Promotion Journal of Australia*, 33(1), 162–169. <https://doi.org/10.1002/hpja.471>
- Iacono, G. (2017). A call for self-compassion in social work education. *Journal of Teaching in Social Work*, 37(5), 454–476. <https://doi.org/10.1080/08841233.2017.1377145>
- Jackson, K. (2014). Social worker self-care- the overlooked core competency. *Social Work Today*, 14(3), 14.
- Johnson, E. O., & Breslau, N. (2001). Sleep problems and substance use in adolescence. *Drug and Alcohol Dependence*, 64(1), 1–7. [https://doi.org/10.1016/S0376-8716\(00\)00222-2](https://doi.org/10.1016/S0376-8716(00)00222-2)
- Lee, H., Rauktis, M. E., & Fusco, R. A. (2022). Perceived stress and sleep quality among master's students in social work. *Social Work Education*, 41(5), 1018–1034. <https://doi.org/10.1080/02615479.2021.1910231>
- Levenson, J. C., Shensa, A., Sidani, J. E., Colditz, J. B., & Primack, B. A. (2017). Social media use before bed and sleep disturbance among young adults in the United States: A nationally representative study. *Sleep*, 40(9), zsx113. <https://doi.org/10.1093/sleep/zsx113>
- Littlewood, D. L., Kyle, S. D., Carter, L.-A., Peters, S., Pratt, D., & Gooding, P. (2019). Short sleep duration and poor sleep quality predict next-day suicidal ideation: An ecological momentary assessment study. *Psychological Medicine*, 49(3), 403–411. <https://doi.org/10.1017/S0033291718001009>
- Liu, Y., Wheaton, A. G., Chapman, D. P., Cunningham, T. J., Lu, H., & Croft, J. B. (2016). Prevalence of healthy sleep duration among adults—United States, 2014. *Morbidity and Mortality Weekly Report*, 65(6), 137–141. <https://doi.org/10.15585/mmwr.mm6506a1>
- Lukowski, A. F., Tsukerman, D., & Veauthier, C. (2021). Temperament, sleep quality, and insomnia severity in university students: Examining the mediating and moderating role of sleep hygiene. *Plos One*, 16(7), e0251557. <https://doi.org/10.1371/journal.pone.0251557>
- Mack, B. M. (2022). Addressing social workers' stress, burnout, and resiliency: A qualitative study with supervisors. *Social Work Research*, 46(1), 17–28. <https://doi.org/10.1093/swr/svab032>
- Makarem, N., Zuraikat, F. M., Aggarwal, B., Jelic, S., & St-Onge, M.-P. (2020). Variability in sleep patterns: An emerging risk factor for hypertension. *Current Hypertension Reports*, 22(2), 19. <https://doi.org/10.1007/s11906-020-1025-9>
- McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica*, 22(3), 276–282. <https://doi.org/10.11613/BM.2012.031>
- Miller, J. J. (2020). Building competency in self-care for social work students: A course-based case study. *Social Work Education*, 39(2), 256–269. <https://doi.org/10.1080/02615479.2019.1620722>
- Miller, J. J., Lianekhammy, J., Pope, N., Lee, J., & Grise-Owens, E. (2017). Self-care among healthcare social workers: An exploratory study. *Social Work in Health Care*, 56(10), 865–883. <https://doi.org/10.1080/00981389.2017.1371100>
- Owens, J. M., Dingus, T. A., Guo, F., Fang, Y., Perez, M., McClafferty, J., & Tefft, B. (2018). *Prevalence of Drowsy-Driving Crashes: Estimates from a Large-Scale Naturalistic Driving Study*. <https://trid.trb.org/view/1501761>
- Peach, H., Gaultney, J. F., Gray, D. D., & Walla, P. (2016). Sleep hygiene and sleep quality as predictors of positive and negative dimensions of mental health in college students. *Cogent Psychology*, 3(1), 1168768. <https://doi.org/10.1080/23311908.2016.1168768>
- Peinado, M., & Anderson, K. N. (2020). Reducing social worker burnout during COVID-19. *International Social Work*, 63(6), 757–760. <https://doi.org/10.1177/0020872820962196>
- Phillips, A. J., Clerx, W. M., O'Brien, C. S., Sano, A., Barger, L. K., Picard, R. W., Lockley, S. W., Klerman, E. B., & Czeisler, C. A. (2017, June 12). Irregular sleep/wake patterns are associated with poorer academic performance and delayed circadian and sleep/wake timing. *Scientific Reports*, 7(1), 1–3. <https://www.nature.com/articles/s41598-017-03171-4>

- Posluns, K., & Gall, T. L. (2020). Dear mental health practitioners, take care of yourselves: A literature review on self-care. *International Journal for the Advancement of Counselling*, 42(1), 1–20. <https://doi.org/10.1007/s10447-019-09382-w>
- QSR International Pty Ltd. (2020) Nvivo (released in March 2020), <https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>
- Robbins, R., Grandner, M. A., Buxton, O. M., Hale, L., Buysse, D. J., Knutson, K. L., Patel, S. R., Troxel, W. M., Youngstedt, S. D., Czeisler, C. A., & Jean-Louis, G. (2019). Sleep myths: An expert-led study to identify false beliefs about sleep that impinge upon population sleep health practices. *Sleep Health*, 5(4), 409–417. <https://doi.org/10.1016/j.sleh.2019.02.002>
- Scott, A. J. (2021). Improving sleep quality leads to better mental health: A meta-analysis of randomised controlled trials. *Sleep Medicine Reviews*, 60, 101556. <https://doi.org/10.1016/j.smr.2021.101556>
- Slavish, D. C., Taylor, D. J., & Lichstein, K. L. (2019). Intraindividual variability in sleep and comorbid medical and mental health conditions. *Sleep*, 42(6), zsz052. <https://doi.org/10.1093/sleep/zsz052>
- Spadola, C., Groton, D. B., Littlewood, K., Hilditch, C., Burke, S., & Bertisch, S. M. (2022). Sleep health education to promote public health: Attitudes and desired learning goals among social work students. *Social Work in Public Health*, 38(1), 1–10. <https://doi.org/10.1080/19371918.2022.2093304>
- Spadola, C. E., Guo, N., Johnson, D. A., Sofer, T., Bertisch, S. M., Jackson, C. L., Rueschman, M., Mittleman, M. A., Wilson, J. G., & Redline, S. (2019). Evening intake of alcohol, caffeine, and nicotine: Night-to-night associations with sleep duration and continuity among African Americans in the Jackson Heart Sleep Study. *Sleep*, 42(11), zsz136. <https://doi.org/10.1093/sleep/zsz136>
- StataCorp. (2017). *Stata statistical software: Release 15*. StataCorp LLC.
- Stutz, J., Eiholzer, R., & Spengler, C. M. (2019). Effects of evening exercise on sleep in healthy participants: A systematic review and meta-analysis. *Sports Medicine*, 49(2), 269–287. <https://doi.org/10.1007/s40279-018-1015-0>
- Tefft, B. C. (2014). *Prevalence of motor vehicle crashes involving drowsy drivers, United States, 2009–2013*. AAA Foundation for Traffic Safety. College Students.
- Ting, L. (2011). Depressive symptoms in a sample of social work students and reasons preventing students from using mental health services: An exploratory study. *Journal of Social Work Education*, 47(2), 253–268. <https://doi.org/10.5175/JSWE.2011.200900092>
- Wickham, S. -R., Amarasekara, N. A., Bartonicek, A., & Conner, T. S. (2020). The big three health behaviors and mental health and well-being among young adults: A cross-sectional investigation of sleep, exercise, and diet. *Frontiers in Psychology*, 11, 579205. <https://doi.org/10.3389/fpsyg.2020.579205>
- Wilson, F. (2016). Identifying, preventing, and addressing job burnout and vicarious burnout for social work professionals. *Journal of Evidence-Informed Social Work*, 13(5), 479–483. <https://doi.org/10.1080/23761407.2016.1166856>