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## The young and the restless: Socializing trumps sleep, fear of missing out, and technological distractions in first-year college students

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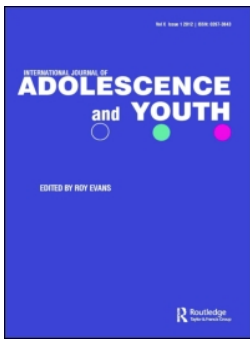
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# The young and the restless: Socializing trumps sleep, fear of missing out, and technological distractions in first-year college students

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## ABSTRACT

College students are a sleep-deprived population, with first-year students facing a number of specific challenges to sleep. As students transition into and through the first year of college, sleep may be sacrificed for a variety of reasons. Semi-structured interviews were conducted with fifteen first-year students, exploring factors that impacted sleep during the first semester of college. Study participants identified three unique but related themes that impacted their sleep: socializing trumps sleep; fear of missing out; and social/technological distractions. Implications are provided for balancing social, academic and biological demands in emerging adulthood.

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## KEYWORDS

Sleep; college; transition; technology; social; fear of missing out

College students, specifically first-year students, are extremely sleep deprived, with approximately 25% of students reporting less than six hours of sleep per night (Lund, Reider, Whiting, & Prichard, 2010). This statistic is alarming given that the average 18-year-old requires approximately 8.5 h of sleep for optimal functioning (National Sleep Foundation, 2013). Sleep deprivation is a troubling phenomenon because it negatively impacts the individual across all domains of functioning, including academic, social, physical and emotional functioning. For instance, sleep deprivation can lead to negative outcomes such as impaired memory, decreased mood, decreased stress management, and impaired immune response (Curcio, Ferrara, & De Gennaro, 2006; Hill, 1994; Wolfson & Carskadon, 1998). While there is a growing body of literature about sleep during adolescence (e.g. Sadeh, Dahl, Shahar, & Rosenblat-Stein, 2009), there is limited research about sleep for first-year students during the initial semester at college – a time when sleep settings/environments (e.g. home versus residence hall) and patterns might change drastically. Moreover, almost no research has relied on qualitative data (e.g. student narratives) to highlight the ways students themselves describe the influences on their sleep, or lack thereof. This study begins to fill that gap.

## Literature review

The first year of college is a time filled with experimentation of how to handle newfound autonomy over the self (Arnett, 2000). Most high-schoolers have some degree of parental oversight when it comes to sleep patterns and making sure they are going to bed at a reasonable time. After beginning college, however, most students must adjust to their newfound autonomy regarding their schedules, as well

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as balancing increasing social and academic demands in an environment with less externally imposed structure. There are a number of factors that may impact a student's ability to get enough sleep during the first year of college, including a fear of missing out (FoMO), environmental stimuli, and technology.

### ***Fear of missing out***

Several psychosocial factors contribute to sleep problems in adolescents, including the desire to stay up late to engage in social activities, self-determined bed times, and easy access to a vast range of stimulating activities (Dahl & Lewin, 2002). The latter may be particularly problematic in college residence halls, where individuals are constantly surrounded by others, and therefore are more likely to engage in social activities that may impact sleep schedules (Dahl & Lewin, 2002). One emerging construct that impacts the ability to set boundaries around sleep is termed the 'FoMO'. FoMO is defined as a pervasive apprehension that a more exciting or interesting event is taking place elsewhere (Przybylski, Murayama, DeHaan, & Gladwell, 2013). Preliminary research exploring the prevalence of FoMO found nearly three-quarters of young adults reported they experienced the phenomenon (Alt, 2015). Przybylski et al. (2013) found FoMO is associated with greater Facebook use, and those high in FoMO were more likely to use Facebook immediately after waking in the morning and before falling asleep at night, which may impact the time it takes to fall asleep along with the quality of sleep.

The generation of students currently enrolled in college is oftentimes characterized as possessing highly developed skills in information technology and multitasking (Alt, 2015). Such skills enable individuals to remain socially connected while engaged in independent work. Previous research has described this generation as focused on social interaction and connectedness with others through mobile phones, chat-rooms and email while simultaneously engaged in other tasks such as video games, listening to music and watching television (McMahon & Pospisil, 2005). Moreover, Pempek, Yermolayeva, and Calvert (2009) found 50% of their undergraduate sample used Facebook to communicate with friends not on campus (i.e. old friends and friends at other schools). Aside from social media use, Dahl and colleagues (2002) suggest social stresses; including fear, anxiety and emotional arousal interfere with the ability to fall asleep during adolescence. During adolescence factors associated with FoMO, such as rumination, stress and worry are likely to affect the time it takes to fall asleep as cognitive components related to the ability to fall asleep are changing (Dahl & Lewin, 2002).

According to Chickering and Reisser (1993) emerging adults engage in seven developmental tasks during the collegiate years. While attempting to develop mature interpersonal relationships, emerging adults must be able to create equitable relationships based upon honesty, respect and equity. Chickering and Reisser (1993, p. 48) also argue 'development means more in-depth sharing and less clinging, more acceptance of flaws and appreciation of assets, more selectivity in choosing nurturing relationships, and more long-lasting relationships that endure crises, distance, and separation'. As emerging adults continue to develop mature interpersonal relationships, they would likely experience less fear that they are missing important social events during times of separation.

### ***Environmental stimuli***

Environmental stimuli can also impact sleep throughout the first semester as students adjust to a new living environment. For example, in their sample of 1125 college students living in residence halls, Lund et al. (2010) found excess noise accounted for 33% of the responses when participants were asked 'How often have you had trouble sleeping because of other reason(s)?' Following closely behind, stress accounted for 35% of the responses. Sharing a bedroom with others (7%) and talking with friends (6%) were also commonly cited as reasons for disrupted sleep. This finding is supported by research suggesting constant contact with peers often interferes with going to bed at a healthy bed time (Dahl & Lewin, 2002). Additionally, when asked 'if your sleep is at all compromised, to what one factor do you most strongly attribute this?' 17% of respondents explained light or noise most strongly influenced sleep; 8% of respondents suggested light or noise most interfered with initiating

sleep. Similarly, Gellis and colleagues (2014) found students with higher levels of insomnia were more likely to engage in arousing behaviours near bedtime, report uncomfortable sleeping arrangements (including a noisy room) and engage in an improper sleep schedule – likely a result of residence hall living, social priorities, and newfound freedom.

As emerging adults move through autonomy towards interdependence (Chickering & Reisser, 1993), they must learn to navigate autonomy and the lack of structure when they arrive at college. Through this transition, emerging adults 'learn to function with relative self-sufficiency, to take responsibility for pursuing self-chosen goals, and to be less bound by others' opinions' (Chickering & Reisser, 1993, p. 47). One of the key aspects of this vector is the ability to set boundaries regarding other's expectations and a 'freedom from continual and pressing needs for reassurance, affection or approval' (p. 47). Setting boundaries that promote self-care may be difficult for first-year students, but they are critical to maintaining development, health and well-being.

## **Technology**

Visually stimulating activity, such as technology use before bed, may also have negative consequences in regard to sleep quality. Despite this, in 2011, the Sleep in America Poll found adults ages 19–29 reported high levels of technology use (i.e. use of cell phones, computers and video games) before going to bed. In fact, 67% of this sample reported using their cell phone prior to sleeping at night, a behaviour which has been linked to difficulty falling asleep, repeated awakenings at night, or early wake times (Hershner & Chervin, 2014; National Sleep Foundation, 2013). Likewise, 60% of the sample reported using computers before bed, putting them at an increased likelihood of experiencing similar symptoms, such as feeling less rested upon waking and daytime drowsiness, particularly while driving a vehicle (Hershner & Chervin, 2014; National Sleep Foundation, 2013).

Chronic night-time exposure to portable device lighting can create a misalignment of the circadian timing system (Cajochen et al., 2011) as well as disrupt the process of melatonin expression (Wood, Rea, Plitnick, & Figueiro, 2013). This is particularly noteworthy for college students, as they are already experiencing a mismatch between the pre-existing circadian rhythm shift of adolescence (an inherent drive to stay up later) and the requirement of an early wake time, such as for morning courses, before adequate sleep duration has been reached (Hershner & Chervin, 2014). This mismatch often causes college students to incur sleep debt during the week, which can lead to catching up on sleep during the weekend by sleeping in later. This, too, further delays the circadian system.

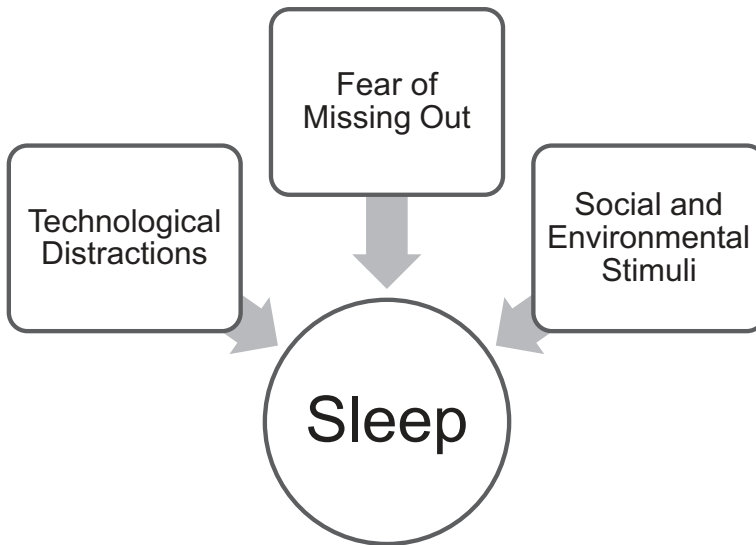
## **Method**

### **Purpose**

This paper was gleaned from an exploratory qualitative study about first-year students' self-reported experiences with health, technology and belonging. This paper specifically focuses on the emergent themes related to one particular aspect of health (i.e. sleep) and technology. Our findings related to belonging and technology can be found elsewhere (Vaccaro et al., 2015). The purpose of this paper is to document the factors, described by students themselves, that influenced their sleep during the first semester of college.

### **Theoretical and conceptual frameworks**

The biopsychosocial model is a theoretical and conceptual framework that elegantly bridges the dichotomy between the social sciences and the medical sciences and considers the role of interpersonal and psychological dynamics for an individual's health and well-being. George Engel (1977), the originator of the biopsychosocial model, proposes that simultaneous attention to biological, psychological and social aspects is necessary when considering health and pathology processes (Doherty & Campbell,



**Figure 1.** Conceptual model for fear of missing out, socializing and technology use affecting sleep.

1988). The biopsychosocial model operates by way of a family systems perspective to understand the multiple reciprocal factors from various facets of human experience. The biopsychosocial model, therefore, is a way of looking at the mind and body as two important systems that are interlinked. Our study employed the biopsychosocial model as a guiding framework for exploring factors that impeded sleep during the first semester of college, while also attending to Chickering and Reiser's developmental considerations in the transition to college (Chickering & Reisser, 1993). See Figure 1.

### **Setting and participants**

The study was conducted at a mid-sized public institution in the United States with 13,000 enrolled undergraduates. The approximately 3000 first-year students who had recently transitioned into the university were eligible to participate in the study. Participants were recruited through the posting of flyers on campus and personal recruitment in first-year seminars and general education courses with high enrollments of first-year students.

The sample consisted of 15 participants in their first year of undergraduate study. Fourteen women and one man volunteered to participate. All participants were traditional-aged students (i.e. 18 to 22 years of age) with the modal age being 18. Seven students had majors in the College of Human Science, one was a Pharmacy major, and seven were undeclared. Thirteen of the students lived in campus housing while one commuted from home.

### **Procedure**

Qualitative interview research allows researchers to obtain 'the intricate details about phenomena such as feelings, thought processes, and emotions that are difficult to extract' (Strauss & Corbin, 1998, p. 11). The purpose of the study was to explore the feelings and processes related to sleep or the lack thereof, rather than medical or quantitative data regarding sleep. Thus, this study explored how university students thought about, felt, experienced and made meaning of their sleep patterns during the first semester of college.

To collect data, we utilized semi-structured interviews, roughly 60 min in length. Glesne (1999) argues that interviews are more than a vehicle for acquiring data, they are analytic acts that help a

researcher understand depth in meanings, explanations and relationships. In short, interview research is a systematic process for studying both the experiences of participants and how they make meaning of those experiences (Seidman, 1998). Interview questions were created broadly to allow first-year college students the ability to describe influences on their sleep or lack thereof. Sample interview questions included: 'How have your sleep habits changed since beginning college?' 'What are the main reasons for the change?'; 'If and how does wanting to feel connected to your friends motivate you to stay up later?'; 'If and how does your intimate life have any effect on your sleep patterns and/or physical health?' Probes, such as 'tell me more about that' and 'can you provide an example', were used to delve more deeply into student meaning-making about sleep.

### **Data analysis**

Interviews were audio recorded and transcribed for analysis. Dual theoretical lenses (i.e. bio-psychological, psycho-social) served as a foundation for our analysis. However, emergent themes through an *in vivo* coding process which are derived from participant words and meaning-making as opposed to a priori assumptions, were also analysed. Then, researchers searched within and between interviews for repetition, similarities, differences and linguistic connectors among the *in vivo* codes (Guest, MacQueen, & Namey, 2012, p. 50).

Three forms of systematic coding were used in this study (Creswell, 2012; Miles & Huberman, 1994). During our first level of coding, each interviewer independently reviewed the transcripts and compiled lists of possible *in vivo* codes. Researchers then engaged in a second level of coding which included grouping first-level codes into 'a smaller number of sets, themes or constructs' (Miles & Huberman, 1994, p. 68). Second-level codes represented themes about sleep, social relationships, intimacy, belonging and technology. The research team then created a codebook containing a detailed coding frame which is 'a structured compendium of codes that include[d] a description of [codes] and how the codes are related to each other' (Guest et al., 2012, p. 50). In the final stage of analysis, we further examined emergent themes from second-level coding, seeking intersections and connections among them. Galletta (2013) explains how in this later stage of analysis, 'relationship among codes is explored, and thematic clusters, or categories are formulated' (p. 127). Then, researchers 'test out ideas about relationships among codes as thematic clusters or categories, moving the research into an increasingly more abstract phase' which was done during phase three of analysis (Galletta, 2013, p. 127). The research team tested the coding frame within single interviews and between interviews, paying special attention to the ways second-level codes related to one another. Through this process, interesting connections among sleep, social relationships, student fears of missing out, and social distractions related to communal living and our technological world emerged.

In order to insure rigour of the study and address issues of credibility and trustworthiness, four strategies were used in this project (Jones, Torres, & Arminio, 2014). The researcher is considered the instrument in qualitative research (Galletta, 2013; Jones et al., 2014). Therefore, the first strategy was to analyse our positionality by recognizing the possible ways our interpretations were shaped by our experiences as individuals (Crotty, 1998). Second, we utilized negative case analysis. In qualitative research, no code can perfectly describe the perspectives and experiences of all study participants. There are always a small number of cases (i.e. 1–2), called negative cases, that highlight the diversity in human behaviour and give oppositional context to an emergent theme. In this paper, we highlight student comments (e.g. negative cases) that ran counter to our codes and emergent themes. Third, we employed a form of peer review by inviting students to participate in peer debriefing sessions about the analyses and interpretations. They offered expert insight into our interpretations. Fourth, we utilized inter-rater reliability – only using codes and themes which yielded 100% agreement among the researchers (Tashakkori & Teddlie, 1998).



## Results

As described in the theoretical framework section, psychosocial development, including balancing autonomy and interdependence as well as forging of mature interpersonal relationships is an important part of college life. However, our findings suggest that the quest to be social came at a cost to sleep for most first-year students. In the following sections, we explicate three emergent themes related to the ways the social atmosphere of college and our technologically connected world deterred students from sleeping enough or sleeping well. We titled these three related, but somewhat unique themes: Socializing trumps sleep; FoMO; and social distractions. Each of these themes contains a combination of in-person, face-to-face interaction, as well as interactions mediated by technology.

### *Socializing trumps sleep*

The first theme was socializing trumps sleep. During the interviews, students spoke at length about the connections between socializing and sleep. All but one student admitted to delaying onset of sleep in order to socialize with peers on campus as well as friends and family from home and high school via social media. One respondent explained how socializing not only went late into the night, but left her restless and unable to fall asleep once she got into bed.

I have friends who I wanna talk to and after coming home from classes and then having homework and then going to dinner. It's like when I finally have time to sit down and talk to them. At that point it's late, so it's like my mind's going. [After I socialize], it takes a little while for me to settle down to be able to sleep, so, I mean, I definitely go to bed later now than I used to at home.

Another participant explained a similar phenomenon. She stayed up late connecting with friends from high school. Because of their hectic class schedules, the only time they could connect on social media was late at night.

Well, my best friend is in Boston now. I haven't seen her since, um, I came here on moving day. It's like we have two different lives, we're doing different things. It's hard to find a time where she's not doing homework and I'm not out doing something else where we can both sit down and talk ... I usually Skype with her later on [in the evening] and it keeps me up – because ... I need [to talk with] my friends from back home!

Another respondent explained how she uses technology to keep in touch with her boyfriend from high school. As with her peers, she found the best time to connect with him was late at night. She shared,

I'm always texting, especially at night. Like, like my boyfriend will text me because like he works during the day and I go to school during the day ... so like it's a big time we have to talk before we go to sleep.

One participant summed up the desire to swap sleep for socializing in person and via social media when she said, 'I just wanna be able to talk to my friends and hang out. I'm [also] always on my laptop, like on Facebook or something and that, like, keeps me up sometimes.'

It is important to note that most of our participants described how socializing with friends on and off campus led to delayed onset of sleep. We found it interesting that very few attributed lack of sleep to homework or academics. In fact, most participants described how they attempted to schedule in homework and 'get it done' so they could socialize. Some respondents reported how staying up late socializing led to exhaustion in the afternoon. So, when he got home from classes, they fell asleep only to wake early in the evening to socialize. Then, he would squeeze in a little homework after other people went to bed. He recognized this pattern, along with an average of four hours of sleep, was not healthy. But, he could not seem to break the cycle.

Generally [I get] like 4 h of sleep a night. [I know] that's not healthy [and I] need to go to sleep earlier [and] need to get work done earlier. But then I'd get in the pattern of staying up late, which meant that when I got home I'd be so tired I'd fall asleep and then I'd wake up [and] do my homework late. You know, it was just like a cycle that I couldn't get out of.

He knew sleep was important, but so was socializing and homework. When time was limited, he chose homework and socializing over a good night sleep. Similarly, other students reported socializing until very late at night and then trying to complete homework after peers went to bed. One explained, 'I think it's more like just hanging out earlier ... and then I decide to work after everyone goes to bed.'

While many of our participants focused on night as a time to socialize, others explained how they made an effort to get homework done between classes during the day. This way, they were able to socialize at night and still get to bed at a reasonable hour. This effort, combined with a class schedule that did not begin until afternoon allowed one student to feel as if she slept enough. She reported,

I really like the way that college is set up because I have a four-hour block in the afternoon. And I really kind of make an effort to get most of my homework done during that time ... and classes start later so I have been getting a lot more sleep.

It is important to note that the student who lived off campus was an exception to this theme. She explained how living at home did not offer the same type of social opportunities as those who lived in the residence hall. She valued her sleep and explained how no social temptations would ever trump sleep. She said, 'I guess not living on campus affects, like, my involvement in, like, social activities ... I wouldn't trade sleep to stay up and talk to somebody.'

### ***Fear of missing out***

The second and related theme that emerged from our data was a FoMO on something important. This fear is often related to social factors and can lead to a delay in the time students went to bed. While the prior section highlighted the self-reported ways that students delayed sleep for socializing, this theme shows that the lure of socializing was so strong that students often missed out on sleep because something fun or important *might* happen. Nothing social could be happening, but they stayed awake just in case it did. One student shared, 'if your roommate's up or like there's people talking in the hallways ... you feel like you shouldn't be asleep.' Another participant responded, 'Everyone else is staying up, [so] you want to stay up later'. And similarly, 'When you go to bed, you could be, like, awake with your friends and, like, be doing other things'.

Furthermore, one participant explained how she was tempted to delay sleep so she could join peers who were watching a movie. It did not matter if she had already seen the film, or if the topic of the film was interesting, the impetus for delaying sleep was the FoMO on the socializing and binding that might happen during the course of the movie. She shared,

In my dorm ... most of the time we leave our doors open so if someone's watching a movie they'll be like, 'Oh, we're watching a movie.' And it will be like 12:00 a.m. and it's like a 2-h movie and you just go!

Other participants explained how groups of students would resist going to bed even when they were tired because they did not want to 'miss something'. One shared,

My friends were typing papers and we were all just staying up. We were all like, 'I'm tired!' but we didn't wanna, like, leave the conversation and miss something. So, it was like, 'Oh, I'll still get seven hours of sleep.' Or it's like, 'Oh, I'll just stay up because I don't get to see you guys'.

Similarly, other students did not want to end conversations via social media for FoMO on a 'really good conversation'. One explained,

If I'm, like, talking to someone on the computer and it's a really good conversation ... I don't wanna be, like, 'I just need to go to bed.' Like, I just wanna continue talking. Then I won't get enough sleep.

While students who reported living in the residence halls experienced the FoMO, the student who lived off campus described less pressure to socialize and, in turn, less disruption to her sleep. She alluded to the FoMO phenomenon, but explained how being physically removed from the residence hall social life allowed her to resist the temptation to stay awake. She shared:

I think it's beneficial to commute ... I don't live in a dorm and have all those people, like, keeping me up at night and it's help[ed], like, my studying and stuff like that ... I don't feel pressure to, like, not study if ... they're like, 'Wanna just hang out or do other things or go out?'

### ***Social and technological distractions***

The third theme involved numerous distractions (e.g. noise in hallways, other people in room, etc.) as well as technological distractions. These distractions were related to the social nature of either the

residence halls or social media. One student compared the residence hall to home and explained how there were no distractions in high school to keep her awake. She said, 'At home your parents went to bed and the house was quiet ... [so] you'd be like, "Oh well, might as well go to bed too", but [here there are lots of distractions]'. By contrast, another participant explained the multitude of distractions related to community living:

It's like there's so much going on, there's so much going on in the hallway, and, in my dorm, um, I know my friend's dorm, their quiet hours start at ten, whereas mine start at eleven, so it's—it's a lot different because you hear the doors slamming and people aren't trying to be quiet about it, like, they just let the doors slam, and it's—it's a big difference ... because, to me, I wake up for, like, little things.

Another student lamented the distractions, but admitted that she was also a culprit at times. She said, 'People's loudness [bothers me]. I feel like some people don't have respect for other people in the hallway ... [but] it's not just other people's fault, it's me too.'

Physical distractions caused by living in a social environment were only part of the problem for our participants. Because we live in a technologically connected world, students also described how social media and other technological distractions kept them awake. One student explained how she was distracted from homework by her cousin who desired social connection. Instead of ignoring the texts or turning off her phone, she gave in to them, which delayed homework completion as well as sleep.

Well also it's like if I'm trying to do homework and my friend was texting me. Like the other day I was trying to do homework and my cousin kept texting me and like every five minutes I would start reading something and he'd text me and I'd have to go back and re-read it and it makes the homework a lot longer which means you have to stay up longer.

Other students noted they kept their cell phones within close proximity when they went to bed at night, potentially waking them when they receive a text message or an update from a social network site. In some cases, taking the potentially distracting cell phone to bed might have been related to the desire to be social and FoMO. For instance, one respondent shared, 'I've been known to answer my [phone] or to answer texts while I'm sleeping'. For others, technological distractions were just part of everyday life. Many did not own an old-fashioned alarm clock. So, they relied on cell phones as their alarm. Participants reported keeping their phone (i.e. alarm) in close proximity (e.g. under their pillow) at night. Some found this to be more of a distraction and sleep interference than others. One respondent mentioned, 'I set my alarm [on my phone] before I go to bed and I keep it under my pillow ... sometimes I wake up if I get a text ... sometimes I don't'. Another student, however, did not feel her phone was a distraction at night. She seemed to be able to set boundaries and limit the distraction from social media, even when her phone was under her pillow. She shared,

I kinda just put it under my pillow and like I use that as an alarm ... I'm not, like, tempted to when I'm like going to bed [to], like, grab it and start texting people ... I just like to put it down and go to sleep.

We conclude this section with a final example that ties all three of our themes together. The incident shows how one young woman had a deep desire to connect socially with her long-distance boyfriend via skype. This young woman's FoMO led her to stay on skype so late into the night that she (and her boyfriend) regularly fell asleep with the computer application open. Our study participant was then distracted by the noise of her roommate's boyfriend snoring. Thus, the connections between social life trumping sleep, FoMO, and social living distractions can be seen in this final quote. The student explained, 'My roommate falls asleep to her Skype ... She Skypes with [her boyfriend] every second of the day ... One time I was sleeping in the room and ... I literally woke up because I heard her boyfriend snoring on Skype.'

## Discussion

This exploratory study examined student self-reported influences on sleep during the first semester of college. Findings revealed that students in their first year of college experienced impaired sleep due to a variety of factors. Three related themes emerged: socializing trumps sleep; FoMO; and technological distractions.

Choosing socializing over sleep was an important theme that emerged in the data. Some participants identified difficulty balancing socializing and homework completion. Socializing would inevitably delay the start of homework, or vice versa, with both scenarios leading to sleep delays. However, because first-year students often have early morning classes, waking up for classes left students sleep deprived. This could also lead to napping in the afternoon, therefore perpetuating the cycle of delayed sleep onset at night. The results also suggest that an important factor in the ability to balance sleep, social and academic demands was the ability to structure one's time. For instance, students who were able to use large blocks of time during the daytime to complete homework had more time at night to socialize. Conversely, students who used their free daytime hours to nap had to utilize the night-time to complete homework and socialize, therefore delaying sleep onset.

Another related social factor that led to sleep delay was FoMO. Participants reported both in person and virtual pressures to stay awake and engage with peers. For instance, some participants did not want to go to sleep and miss social interactions with their peers. Others felt pressure to stay awake, as they did not want to be the first person to go to bed. These pressures also include virtual and technological pressures, such as not wanting to leave an online or skype conversation. This finding sheds insight into the vector moving through autonomy towards interdependence (Chickering & Reisser, 1993). To move through the autonomy and independence vector, students must learn time management as well as function self-sufficiently with little regard for other's opinions. One of the key aspects of this vector is the ability to set boundaries regarding other's expectations and a 'freedom from continual and pressing needs for reassurance, affection or approval' (p. 47). Our findings suggested that FoMO was so strong that it often led to lack of boundaries, which negatively impacted sleep. It seems as if students were so bound by other's opinions, actions, and even *potential* actions that they delayed sleep to socialize or wait for socializing to happen.

As college students engage in the process of identifying new peer groups, it may be anxiety provoking to be the first person to disengage from the group by deciding it is time to go to sleep. First-year students may not want to appear disinterested in their new friends and therefore overcompensate by over-engaging and setting few boundaries on their time. In this study, FoMO was so strong that they had difficulty 'unplugging' from each other both in person and through technology. Participants felt that they 'shouldn't sleep' because they might miss something important. As emerging adults develop mature relationships characterized by increased separation, independence and distance from peers, they may be more able to unplug from peers, engage in self-care, and feel secure in the fact that their friends will still be present in their lives.

The social nature of college life, and specifically residence hall living, also introduces newly matriculated students to multiple distractions that were not present when they lived at home. Our findings affirm prior studies that suggest environmental influences impact sleep (Lund et al., 2010). However, our data push beyond those studies to show how the environmental influences were not only physical (e.g. light, noise), but were inherently tied to the social nature of communal living (e.g. residence halls) and the ever-present social connections made possible by technology.

Some distractions may have been present at home during high school, such as technology. It is common for adolescents of all ages to use cell phones before bed and/or in bed, thus interfering with their ability to fall asleep and remain asleep (National Sleep Foundation, 2013). Many college students will answer texts as they are trying to fall asleep or will wake up from sleep to answer texts. These behaviours may be related to a FoMO, or social norms that dictate the need to immediately acknowledge text messages. A few of our participants, however, were able to regulate their technology use and were not overly distracted by technological demands during sleep. Future research should explore this phenomenon further.

Although three primary themes were identified, the associations among sleep and each individual theme were complex. As the final quote showed, there were connections between the act of socializing, FoMO, and the social distractions of community living and our technologically connected world. While future research is needed to explicate the connections between these themes, our study adds to the literature by showing three unique, but interrelated reasons why first-semester college students

sacrificed sleep. Although we did not measure the type or quantity of sleep, all participants alluded to the fact that they did not get enough – some citing as little as four hours a night. Since inadequate sleep negatively impacts individuals across all domains of functioning (e.g. academic, physical, emotional), these findings offer scholars and practitioners rich qualitative information about why students report a deficit of sleep. In returning to our combined biopsychosocial and developmental theoretical perspectives, we argue that parents, scholars and practitioners must find ways to help college students develop mature interpersonal relationships and autonomy and interdependence in ways that do not require giving up sleep. The psycho-social and bio-psychical developments are both crucial to human development. In this study, we found, with one exception, that first-year students were not very successful at achieving optimal development in any of these areas.

### **Limitations and future directions**

Several limitations to this study must be noted. To begin, because of the homogeneity (e.g. mostly women who lived in residence halls) and small size of the sample, results may not be transferrable to commuter students or other settings. Thus, future research should explore factors contributing to impaired sleep among a larger, more diverse population (e.g. males, athletes, students who lived off campus, students who are employed). Secondly, sleep duration and quality were not directly assessed as part of this study. Future research should combine student self-reported narratives about college life and sleep with precise measurements of sleep activity via technology or sleep diaries. It is possible that results may differ among first-year students based on their level of sleep problems. Future research should explore factors influencing sleep impairment among a population of students who report problems with sleep deprivation in attempt to gain a greater understanding of factors impacting sleep impairment during emerging adulthood. These factors might include sociocultural factors that could impact sleep, such as pre-existing mental health issues and academic, occupational or environmental stressors that impact sleep and overall well-being during the first year of college.

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No potential conflict of interest was reported by the authors.

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