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Negative Roommate Relationships and the Health and Wellbeing of **Undergraduate College Students**

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Abstract

Objectives: The purpose of this study was to better understand the impact of negative on-campus roommate relationships on undergraduate students' health and wellbeing. Methods: Thirty students aged 19 to 22 from a large public research university on the west coast of the DOI: https://doi.org/10.15586/jphsc. United States participated in this study. Thirty semi-structured interviews were conducted and data was analyzed using open-coding to identify substantive patterns and themes. Results: Avoidance behaviors appeared to be common among participants during their negative roommate relationship, as were changes in anxiety and stress levels, sleep, and concentration. Differences in roommates' communication styles impeded conflict resolution. On-campus student services can offer valuable assistance, but students are generally under-informed as to the nature and availability of such help. Conclusion: Perceptions of on-campus student health and wellness services may influence students' decisions to seek help from these services to cope with a negative roommate experience.

Keywords: college student; student housing; health and wellbeing; negative roommate relationships

Introduction

A significant part of many undergraduate students' college experiences is sharing on-campus housing with roommates for the first time. At its best, on-campus living can provide a sense of belonging and identity, and a dorm room may afford tranquility, peace, comfort, and safety. However, if the roommate situation is not optimal, how might the student be affected?

The transition from living at home to college accommodations is a major life event for many young adults in the United States.¹ Approximately 19.9 million students attended an American university during the 2018–2019 school-year.² Of that number, approximately 40% or 800,000 students lived in campus-affiliated housing, according to a survey of 23,518 students from 44 different American campuses.3 Universities commonly match roommates based on algorithms designed to determine compatibility, but no algorithm is foolproof and students still experience roommate conflicts. One national study, sampling 31,500 students, found that almost half, or 47.9%, "reported 'frequent' or 'occasional' conflict with their roommates or housemates."4,5 Extrapolating from these figures, it appears that approximately half of all American college and university students experience some level of inter-roommate discord.

There are many indicators of inter-roommate discord among university students, stress being one contributing factor.⁴ According

to previous studies, recurring roommate conflicts can predict students' stress levels, affect their overall satisfaction during university, and can impact their cognitive vulnerability.^{4,6,7} Comparatively, another study found that students who did not feel comfortable studying in their residence halls or rooms, as well as students who reported having roommate conflicts, appeared to experience higher levels of stress.8 These students were also more likely to report sleep and academic difficulties due to stress.8 Although stress is a normal part of life, excessive stress in college can negatively impact students' academics, emotional wellbeing, and health outcomes.9,10 One study found that feeling stressed for extended periods of time can potentially lead to increased levels of anxiety as well as other physical and mental health related problems.¹⁰ Common psychological health problems college students experience include anxiety and depression.11 Increased levels of anxiety and depression can impact students physiological health and academic performance, in addition to their emotional, social, environmental, and intellectual wellbeing. However, mental illness can also have implications on students' "academic success, productivity, substance use, and social relationships (p. 3)."12

To deal with stressors associated with roommate conflicts, many students turn to coping strategies. While some coping strategies can be beneficial to students' health, such as meditation and yoga, others can

pose negative implications to students' health and wellbeing.¹³ Coping strategies typically appear in the form of: "self-help, approach, accommodation, avoidance, and self-punishment (p. 89)."¹⁴ Avoidance and self-punishment are coping strategies that are commonly associated with greater negative health outcomes.¹⁴ These maladaptive responses can manifest in students' eating habits, emotional focus, behavioral activities, and emotions.¹⁴ To address these concerns, it is common practice for US universities to offer counseling services and health promotion programs designed to address the needs of their student population.^{15–17} Student wellness is a pervasive concern.¹⁷ Therefore, understanding how negative roommate experiences can impact undergraduate students living on campus is an essential part of developing a culture that enhances students' health and wellbeing.¹⁸

The purpose of this study was to better understand the impact of negative on-campus roommate relationships on undergraduate student's health and wellbeing. Students residing on campus, eat, sleep, work, and socialize all in the same environment. A negative experience in one aspect of college life may affect other areas. Universities that understand the potential impact of negative on-campus roommate relationships are better situated to develop policies and programs to support students' health and wellbeing, and thus improve the campus environment for all.

Methods

Operationalization of key terms

In this study, health will be defined according to the World Health Organization definition: "A state of complete physical, mental, and social wellbeing, and not merely the absence of disease or infirmary (p. 1)."¹⁹ In the context of this study, wellness is defined as a positive rather than a neutral state of being.²⁰ A roommate relationship can be defined as the way two or more people who occupy the same room behave toward another. This study examines platonic oncampus roommate relationships.

Data collection

Students self-identified by responding to a solicitation. They were recruited through university-run Facebook groups, selected using purposive sampling based on three criteria, and compensated with a \$10 Starbucks gift card. Eligible participants were: (i) aged 18 years or older; (ii) a current undergraduate student; and (iii) presently or previously having a negative roommate experience while living in on-campus housing.

The lead researcher conducted 30 semi-structured interviews with undergraduate students from a large research university on the west coast of the United States. Using an interview guide composed of open-ended questions, the researcher asked interviewees to reflect on past or present negative roommate experiences and the involvement of the university during those experiences. The lead researcher audio-recorded and transcribed the interviews verbatim immediately after conducting each interview. Participants' identifying information, including names, locations, and academic year of the experience, were anonymized to protect their privacy and that of all other parties. In this study, sample size was determined at the point of thematic saturation or once the collection of new data no longer revealed new themes.²⁴ Approaching the completion of data collection, it became apparent that significantly more women than men had enrolled in this study. This bears out the findings that women are more likely than men to respond to undergraduate research pools.²⁵ Therefore, reliance on undergraduate student samples may provide an explanation for low male to female ratio.²⁵ Excluding data from male participants in this study may compromise the richness and representativeness of the data to the university's student population.²⁶ This research study was not designed to make gender-based distinctions; however, this points out an area in which further research could be useful.

Data analysis

Grounded theory methodology was used to analyze this data. Grounded theory is an inductive qualitative methodology concerned with the generation of theories from data that are collected and analyzed systematically.^{21,22} When using this method of analysis, researchers collect nonnumerical data and analyze it "using coding and sampling procedures" composed of three main strategies: data coding, memo writing, and theoretical sampling.²³ Table 1 describes the process of applying grounded theory to analyze our data.

Procedures

The study protocol was approved by the university's Institutional Review Board. Interviews took place in February–March 2019. At the beginning of each interview, students were provided the study information sheet and a short demographic questionnaire. They signed an informed consent form agreeing to participate in the study and to be audio-recorded during the interview.

Results

Demographic characteristics

A total of 28 females and 2 males participated, with a mean age of 20.03 ± 0.99 years; representing all four undergraduate academic years (freshman 13%, sophomore 37%, junior 27%, senior 23%), and a diversity of majors (public health 17%, biological sciences 17%, psychology 13%, and business economics 10%). The majority of participants self-identified as Asian (43%) or Hispanic/Mexican (33%), which is in line with the university's student ethnicity and race demographics (35% Asian and 26% Hispanic/Mexican). Two-thirds were first-generation college students, and 90% had not transferred from another college or university.

Data analysis

Analysis revealed three major topics: the effect of negative roommate relationships on students' health and wellbeing; common coping strategies among students experiencing roommate conflicts; and students' approaches to conflict resolution. Within these areas, eight themes emerged. Quotes from students representing common responses are presented in Table 2 and explored further in the Discussion.

Coding	Phase 1. Open coding: Describing the data by analyzing it line-by-line.	Immediately after interviewing a participant, the researcher transcribed the interview verbatim. At the end of the day, the researcher would review the data line-by-line and generate codes, and identify patterns and potential themes.
	Phase 2. Axial coding: Generating categories and sub-categories by drawing connections between phase 1 analysis.	Next, the researcher developed conceptual categories or substantive codes by drawing connections between the codes, patterns, and themes developed during phase 1 of coding.
	Phase 3. Selective coding: "Developing overarching categories." ²³	Finally, the researcher organized the categories developed during axial coding into three core categories or overarching themes: (i) Negative roommate relationships' effects on students' health and wellbeing; (ii) common coping strategies; and (iii) resolving roommate conflicts.
Memo-writing		Throughout the coding process, the researcher wrote memos to keep track of theoretical ideas. Memo-writing also helped the researcher identify potential gaps in data collection.
Theoretical sampling		The researcher continued to interview participants, and went through the three phases of coding until data no longer contributed to the understanding of a concept or category.

Theme	Participant Responses	
Mental health	"I would definitely say my anxiety went up a lot, especially the few weeks before she moved out just because I felt a lot more uncomfortable, even just being in the room when she wasn't there, just knowing that she lived there."	
Physical health	"It would get to the point where we would have to literally wade through garbage and dirty laundry and literally wrappers and garbage just to get into the room, which was very difficult. Plus, [roommate] always shed these little fist-sized clumps of hairballs, so literally there's clumps of hair, dirt grime, garbage on the floor in literally thick layers and it was just disgusting."	
Emotional wellbeing	"I've always been one of those happy go lucky people and I feel like I was just like depressed like I would only feel happy when I was home, and I would always come back from a weekend of being home and my mom would literally tell me that she'd look at my face and like felt so sad for me and said like I just looked like I didn't want to be there."	
Social wellbeing	"I had a boyfriend, so uh I talked to him all the time. I talked to my parents all the time too, they felt like really bad for me and they'd try to step into the situation, but I was like it's fine. I wanted to handle it on my own because I'm like in college, and I'm like a grown up now. Like that's what I thought, but um my brother as well, he's really open about talking to me about things." "I'm not very confrontational, so when someone tells me that something that I'm doing is bothering them I don't know how to immediately respond cuz I'll just be like 'oh ok I'll try to change', but like without thinking about it. But then I regret it later because I would want to like fight about it kind of, but I wouldn't go back to it."	
Avoidance	"It would just make me want to, like right when I was ready to go in the morning I would just like leave for the entire day and I would avoid coming back for stuff because I like didn't want to see [my roommate]." "[I spend] about like 15 hours or like 16 hours a day outside of the room."	
Accommodation	"I was very open to what they wanted, what they didn't want, like my [significant other] for example, they didn't want them there and so I was very accommodating to that."	
Knowledge of on-campus housing and student services	"I didn't know whom to talk to, so I messaged the entire community advisor person, and then she was like 'oh, I can't actually help you with this." "I know we have the [university] counseling, I don't know if CARE is the same thing, I know we have student health and wellness, I don't know if anyone goes in there for like roommate, I think they mainly focus on, like mental and sexual health."	
Student-suggested services	"I don't know if it would be anonymous or not, but I would do like a phone call or a texting service, like similar to the RA thing like even calling would be fine and I understand if people don't like to confront like face-to-face, it's hard, and um people are shy and people can't be open sometimes, so like I would do a service like that. Like an open kind of text line, like an open call line where you can talk to someone. Maybe even like a counselor, maybe talk to someone and ask what you should do at that moment, um, cuz like talking to friends is fine, but they're not open 24/7 or they're not open late into the night when stuff happens."	

Table 2. Themes and exemplar responses.

Negative roommate relationships' effects on students' health and wellbeing

This section discusses the variety of effects that negative roommate relationships have on students' health and wellbeing.

Mental health

Participants reported anxiety during their negative roommate experiences which they attributed to discomfort and intimidation in the dorm room ([*I felt*] *anxiety, especially after that fight that*

we had, it's mostly from the intimidation and the fact that you don't feel safe or comfortable in your own home). Some students experienced somatic symptoms (I remember my heart just beating, and I would feel anxiety just walking up the stairs to approach the door of my apartment).

Physical health

Cleanliness and sanitation were common causes of conflict (Near the end, there were maggots in the dishes...there's mould, there's flying *bugs... you could sort of feel the fleas jump up on you...and cat* [poop] everywhere). Students' sleep schedules were altered (I started to make changes and so I wore headphones, I took sleeping pills to try and not wakeup, and I took it all through last year), which affected academic performance (It impacted how I performed at school because I was very tired in class, and the tired stemmed from me not sleeping well because I was very anxious in my room). Other students ate out more often (I didn't even want to go home and eat, which was financially bad because I would be spending money at the [University Town Center] or other places to buy food) and found it challenging to maintain a healthy diet (I went to ... a regular dermatology appointment and he actually told me that I lost 8 pounds in the course of a month, so I guess I stopped really taking care of myself and eating). Some participants felt unsafe around their roommates because dangerous objects were kept in the room ([My roommate] had a knife collection, so that was ... scary, like [they] would show it to me, and this one time [they'd] be like "oh don't mess with me...").

Emotional wellbeing

All participants wanted their dorm to be a happy, supportive, homelike environment but when it was not, participants were upset (Anger, a little bit of depression ... and like sadness, and I don't know, and just tension because ... I'm supposed to go home and feel comfortable and instead I go home, and I feel upset every night). Depictions of roommate situations in movies influenced participants' expectations (I thought that having a roommate would be super fun, the way that it's perceived in movies and stuff). Participants whose experiences did not meet expectations blamed themselves (What if I am doing this whole college thing wrong and I felt I had messed it up).

Social wellbeing

Participants relied on family, friends, and significant others for social support (*I had a [significant other] so I talked to [that person] all the time. I talked to my parents all the time too*). Participants reported that communication was difficult but acknowledged its importance in resolving conflicts:

I practiced and I would say I'm going to soften my image, but then when I actually started talking, it kind of seemed like I'm punching you with words type of thing... so if anything, I could've been more open to other forms of communication besides one-on-one, but recognized that differences in communication styles exacerbated conflicts:

I tried to bring it to [my roommate] straightforward, but... [the roommate is] not really confrontational, so [the roommate] would always just be like, okay, okay.

Common coping strategies

Main coping strategies of participants were *avoidance* and *accommodation*. Participants using avoidance spent minimal time in their rooms ([*I spent*] *about 15 hours or 16 hours a day outside of the room*). They filled their time with campus activities and clubs (*I was on campus a lot and so it made me make more connections outside of* [*my dorm*]) or studying (*If anything that helped, because that means I studied more often, because it's a good distraction from how your living situation is*).

Accommodating participants tried to be mindful of roommates' feelings ("I was very open to what they wanted, what they didn't want, like my [significant other], for example, they didn't want them there ... so I was very accommodating to that"). They adjusted their behaviors to make their roommates more comfortable ("I had to be more accommodating towards what living with someone is like, whether that's being considerate about what time they need to wake up or being more organized the night before").

Resolving roommate conflicts

Participants either filled out a survey for campus housing, which then assigned roommates or located their own roommates. Some participants with assigned roommates criticized the survey ("I don't think people are being honest and ... I don't think people actually know what they want in a roommate, and I think the questions should be more in depth"). Participants would have preferred questions focused on traits they sought in a roommate, rather than on their own behaviors and interests, since those change over time:

My roommate mentioned that [she was] more of an early person, went to sleep early, but as the year progressed [she] started going to bed later and I had to start wearing headphones because [she] would be kind of loud when [she] walked in.

Many participants sought support from existing interpersonal relationships but did not contact on-campus housing or student services ([*She was*] a good RA [residential assistant], but I didn't feel comfortable going up and talking to [her] about it... I was very shy). Participants knew about campus counseling services and were aware that they had access to an RA or a community assistant (CA), but other on-campus health and student services were less well-known:

I know we have the (campus) like the counseling, I don't know if CARE is the same thing, I know we have student health and wellness, I don't know if anyone goes in there for roommate, I think they mainly focus on mental and sexual health. Participants would have liked classes on handling roommate conflicts:

Like an event that students can go to where ... they would just let them know basic things like trying to keep your space clean, and ... different ways that they can go about talking to their roommates without it being a forceful conversation.

Another popular suggestion was an anonymous hotline that students who experience roommate conflicts could use for advice:

... I would do a service ...an open kind of text line, an open call line where you can talk to someone ... cuz talking to friends is fine, but they're not open 24/7 or they're not open late into the night when stuff happens.

In retrospect, participants wished that they had confronted roommates immediately:

If I would've nipped it in the butt [sic] at the beginning and have told myself, hey you need to confront these problems because you don't want them to snowball, that would've been good advice.

Discussion

This research contributes to previous studies that aim to understand how undergraduate students' experiences impact health and wellbeing by examining the challenges that many students encounter while living in on-campus housing. Results of this study support existing research indicating that students who do not feel comfortable in their housing environment or who are experiencing difficulties adjusting to college are more likely to report higher levels of stress and stress-related academic difficulties as well as mental health problems such as anxiety.⁵ This study also found that students unrealistic expectations could be detrimental if they are unprepared for the challenges they may encounter in their on-campus residential environments. For instance, findings from a study (n = 166)conducted at a US university that examined how roommate relationships can impact students' sense of belonging, concluded that students' expectations of a university roommate experience prior to moving into university housing influenced overall levels of student satisfaction.27

When students are confronted with such negative roommate experiences, they develop coping mechanisms.²⁸ This study found that participants primarily used accommodation and avoidance as ways to cope with negative roommate experiences. Other studies have reached comparable conclusions while also considering gender-related differences on how students cope with roommate relationship conflicts.^{28–30}

Introducing alternative conflict management tactics provides another approach for mitigating roommate conflicts. Previous studies examined the role of professors, family support, and university student services to enhance student health and mental wellbeing.^{17,31} This study, however, has found that students were not accessing these services because they did not know about them or did not believe that they could help them with their roommate relationships.

Future research should explore students' perceptions and knowledge about utilizing student health and housing services during roommate conflicts. Likewise, understanding why students choose not to seek help from university student resources during negative roommate experiences could provide useful information for student service professionals who are developing and implementing such programs and services. Additionally, investigating the university roommate selection process and comparing and contrasting students' roommate experiences within those settings could be useful for understanding the advantages and disadvantages of relying on various systems for roommate assignments.³² However, it is important to acknowledge that university environments can differ depending on student culture, demographic characteristics, geographic location, and the size of the university student population.¹⁷ Therefore, generating research that is representative of diverse student populations will be important for providing evidence-based information that is transferable to many universities.

Limitations

In qualitative research, the term *transferability* is used to describe the applicability of a study's findings to similar populations, contexts, and situations.³³ The transferability of this study could be affected by the disproportionate number of females to male participants. Additionally, recall bias may have affected second-, third-, and fourth-year participants who were reporting about a negative roommate experience from a previous year.

Strengths

The ethnic diversity of the participants in this study contributes to its transferability to other universities, especially universities whose student demographics are similar to our sample. The findings of this study can be used to inform how other institutions approach roommate conflicts. Another strength of this research is that it identifies areas that perhaps are not being addressed by existing programs. This study indicates possible reasons for this disconnect: students may not be aware of existing resources or may not believe that existing resources are helpful in addressing their specific problem. Therefore, the findings of this study may be valuable for universities looking to improve their student housing and health services to best support students experiencing roommate conflicts. In a broader sense, these findings may encourage campuses to reevaluate their services to make sure that their offerings are addressing students' needs.

Conclusion

The results of this study have the potential to improve college students' on-campus housing experience, demonstrating that opportunities for students to participate in conversations with trained individuals on topics, including roommate conflicts, is an important component of a successful campus health-promotion program. On-campus health and housing services are essential partners in this endeavor. They can provide advice, follow-up, and, importantly, personal expression of concern for an individual student experiencing roommate conflicts. Encouraging students to engage with on-campus housing and student health services and providing opportunities for students to be involved in the decision-making process will work to ensure that the programs implemented to help students resolve negative roommate relationships meet actual student needs.

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References

- Bowman N. The development of psychological well-being among firstyear college students. J Coll Stud Dev. 2010;2(51):180–200. https://doi. org/10.1353/csd.0.0118
- National Center for Educational Statistics (NCES). Fast facts: back to school statistics. Washington, DC: NCES, US Department of Education. 2019. https://nces.ed.gov/fastfacts/display.asp?id=372. Accessed March 4, 2019.
- 3. American College Health Association. *National College Health Assessment II: Undergraduate Reference Group Executive Summary, Fall* 2011. Hanover, MD: American College Health Association; 2012.
- Erb S, Renshaw K, Short J, Pollard J. The importance of college roommate relationships: a review and systemic conceptualization. J Stud Aff Res Pract. 2014;51: 43–55. https://doi.org/10.1414/jsarp-2014-0004
- Liu A, Sharkness J, Pryor H. Findings from the 2007 Administration of Your First College Year (YFCY): National Aggregates. Los Angeles, CA: Higher Education Research, University of California, Los Angeles; 2008:15.
- Keup J. Great expectations and the ultimate reality check: voices of students during the transition from high school to college. NASPA J. 2007;44: 3–31. https://doi.org/10.2202/0027-6014.1752
- Bradbury B, Mather P. The integration of first-year, first-generation college students from Ohio Appalachia. NASPA J. 2009;46(2):258–281. https://doi.org/10.2202/1949-6605.6041
- Dusselier L, Dunn B, Wang Y, Shelley M, Whalen D. Personal, health, academic, and environmental predictors of stress for residence hall students. J Am Coll Health. 2005;54:15–24. https://doi.org/10.3200/ JACH.54.1.15-24
- Pitt A, Oprescu F, Tapia G, Gray M. An exploratory study of students' weekly stress levels and sources of stress during the semester. *Active Learn Higher Educ.* 2018;19(1):61–75. https://doi.org/10.1177/1469787417731194
- Beck DL, Hacket MB, Srivastava R. Perceived level and sources of stress in university professional schools. J Nurs Educ.1997;36(4):180–186. https://doi.org/10.3928/0148-4834-19970401-08
- Heiligenstein E, Guenther G, Levy A, Savino F, Fulwiler J. Psychological and academic functioning in college students with attention deficit hyperactivity disorder. J Am Coll Health. 1999;47(4):181–185. https:// doi.org/10.1080/07448489909595644
- Hunt J, Eisenberg D. Mental health problems and help-seeking behavior among college students. *J Adolesc Health*. 2010;46:3–10. https://doi. org/10.1016/j.jadohealth.2009.08.008
- 13. Schure M, Christopher J, Christopher S. Mind-body medicine and the art of self-care: teaching mindfulness to counseling students through

yoga, meditation, and qigong. *J Couns Dev.* 2011;86:47–56. https://doi. org/10.1002/j.1556-6678.2008.tb00625.x

- Brougham R, Zail C, Mendoza C, Miller J. Stress, sex differences, and coping strategies among college students. *Curr Psychol.* 2009;28(2): 85–97. https://doi.org/10.1007/s12144-009-9047-0
- 15. McMurray, A., Sorrells, D. Student services and the college classroom: some ideas for collaboration. *Coll Stud J*. 2007;41(4):1218–1223.
- Gould J. Mental health: stressed students reach out for help. Nature. 2014;512(7513):223–224. https://doi.org/10.1038/nj7513-223a
- Baik C, Larcombe W, Brooker A. How universities can enhance student mental wellbeing: the student perspective. *Higher Educ Res Dev.* 2019;38(4):674–687. https://doi.org/10.1080/07294360.2019.1576596
- Centre for Innovation in Campus Mental Health (CICMH). *Healthy* Universities/Campuses Approach. Toronto, Ontario, Canada: CICMH. https://campusmentalhealth.ca/toolkits/campus-communityconnection/models-frameworks/healthy-universities-campusesapproach/. Published 2021. Accessed September 24, 2018.
- World Health Organization (WHO). Constitution of the World Health Organization.http://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en. pdf. Published April 7, 1948. Accessed September 24, 2018.
- Atkinson S, Joyce E. The place and practices of well-being in local governance. *Environ Plann Govern Policy*. 2019;29:133–148. https://doi. org/10.1068/c09200. PMID: 25729122
- Strauss AL, Corbin JM. Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. Thousand Oaks, CA: SAGE; 2008; Third Edition, Chapter 4. https://dx.doi. org/10.4135/9781452230153
- Chun Tie Y, Birks M, Francis K. Grounded theory research: a design framework for novice researchers. SAGE Open Med. 2019; 7:1–8. https:// doi.org/10.1177/2050312118822927
- Haig B. Abductive research methods. In: Baker E, McGaw B and Peterson P, eds. International Encyclopedia of Education, Vol. 3, 3rd ed. Cambridge, MA: Elsevier; 2010:77–82. https://doi.org/10.1016/B978-0-08-044894-7.01688-2
- 24. Green, J., Thorogood, N. Qualitative Methods for Health Research. Thousand Oaks, CA: Sage; 2004.
- Barlow MR, Cromer LD. Trauma-relevant characteristics in a university human subjects pool population: gender, major, betrayal and latency of participation. J Trauma Dissociat. 2006;7:59–75. https://doi.org/10.1300/ J229v07n02_05
- Dickinson E, Adelson J, Owen J. Gender balance, representativeness, and statistical power in sexuality research using undergraduate student samples. Arch Sex Behav. 2012;41(2):325–327. https://doi.org/10.1007/ s10508-011-9887-1
- Yao C. Unfulfilled expectations: influence of Chinese international students' roommate relationships on sense of belonging. J Int Stud. 2016;6(3):762–778. https://doi.org/10.32674/jis.v6i3.355
- Brougham R, Zail C, Mendoza C, Miller J. Stress, sex differences, and coping strategies among college students. *Curr Psychol.* 2009;28(2): 85–97. https://doi.org/10.1007/s12144-009-9047-0
- Marek C, Wanzer M, Knapp J. An exploratory investigation of the relationship between roommates' first impressions and subsequent communication patterns. *Commun Res Rep.* 2004;21(2):210–220. https://doi. org/10.1080/08824090409359982

- Dusselier L, Dunn B, Wang Y, Shelley M, II, Whalen D. Personal, health, academic, and environmental predictors of stress for residence hall students. J Am Coll Health. 2005;54(1):15–24. https://doi.org/10.3200/ jach.54.1.15-24
- Henninger W, Osbeck A, Eshbaugh E, Madigan C. Perceived social support and roommate status as predictors of college student loneliness. *J Coll Univ Stud Housing*. 2016;42(2):46–59.
- Molina D, Heiselt A, Justice C. From matchmaker to mediator: shifting trends in roommate relationships in an era of individualism, diversity, conflict, and social media. *J Coll Univ Stud Housing*. 2015;41(2): 104–116.
- 33. Merriam, SB. *Qualitative Research: A Guide to Design and Implementation*. San Francisco, CA: John Wiley; 2009.