

Transition practices of college students with a mental health disorder

Cara C. Young^{a,*}, Susan J. Calloway^b, Nani Kim^a

^a The University of Texas Austin School of Nursing, 1710 Red River St., Austin, TX 78712, USA

^b Texas Tech University Health Science Center School of Nursing, 3601 4th St., Lubbock, TX 79430, USA

ARTICLE INFO

Keywords:

College students
Mental health disorder
Transition
Mental health promotion
504 accommodations

ABSTRACT

Objective: To explore transition practices, mental health promotion, and psychological health among college students with a mental health disorder.

Participants: data were collected from college students attending a southwestern university.

Methods: a web-based survey of transition practices, mental health promotion activities, and psychological health (i.e., self-efficacy, life satisfaction, and loneliness). A semi-structured interview was offered to all participants.

Results: A total of 140 participants (M age = 20.67 [SD=1.88]) completed the survey and N=29 (M age = 20.24 [SD=1.84]) completed a semi-structured interview. When preparing for the transition into college, participants frequently considered geographical distance from home, living in a dormitory setting, and the student orientation/integration process. After entering a university, the student counseling center was accessed by 20.2% while only 6.4% filed for 504 accommodations. All participants considered having a close friend as important for mental health promotion.

Conclusions: A formal process of transition planning as it related to optimizing mental health was not consistently undertaken. Proactive transition interventions for college-bound students with a mental health disorder are needed and could include planning for ways to become involved in campus life and filing 504 accommodations to support academic success.

The abysmal state of mental health among college students is a public health crisis with suicide being the third leading cause of death among this population.⁴³ Mental health problems among college students are associated with poor academic outcomes, substance use, impaired social relationships and poor physical health.^{11,14,18,19} According to data from the American College Health Association-National College Health Assessment II the number of students reporting at least one mental health diagnosis over the past 10 years has grown by 80.58%. American College Health Association.^{1,2} The greatest increases among these disorders were found in anxiety (136.21%) followed by ADD/ADHD (121.74%), obsessive-compulsive disorder (119.05%) and depression (102.80%). The COVID-19 pandemic further exacerbated this public health crisis as college students were forced from campuses into online learning environments where isolation, uncertainty, and loss characterized many students' experiences.²⁶

Traditional college age students face many challenges as they launch into their next major life milestone of leaving home and attending college. As the late adolescent becomes an emerging adult the autonomy offered by college life allows further exploration of identity along with

the development of new and intimate relationships.^{6,15,31} The freedom found within this new stage in life is confronted with multiple challenges that impact a successful transition such as peer pressure, time management, academics, finances and establishing new and fulfilling social relationships. The ability to address these challenges may be impacted by the lack of brain maturation which is influenced by both heredity and environment.⁴ The prefrontal cortex, found within the frontal lobe, is the last area of the brain to mature. It is responsible for activities such as planning, impulse control, and working memory. These activities of executive function are critical to the successful navigation of college life.^{20,23}

Students who enter college with an existing mental health disorder are particularly vulnerable to these challenges resulting in destabilization and deleterious outcomes across multiple domains. According to a national survey, 64% of students entering college with a mental health disorder later withdrew due to mental health destabilization (NAMI, 2013). Of the students that withdrew, 45% had not filed for accommodations, which could have provided options for a student to remain enrolled. Even with the availability of mental health services on college

* Corresponding author.

E-mail address: Cyoung@mail.nur.utexas.edu (C.C. Young).

<https://doi.org/10.1016/j.hctj.2023.100020>

Received 13 June 2023; Received in revised form 21 September 2023; Accepted 23 September 2023

Available online 5 October 2023

2949-9232/© 2023 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

campuses, 50% of youth with a mental health disorder did not access or were unaware of the availability of resources to support their success (NAMI, 2013).

It may be that improved preparation and planning prior to the adolescent transition into college (i.e., transition planning) could support the student during and after this transition thus preventing mental health destabilization. Little is known, however, about mental health focused transition considerations and practices among college students with a mental health disorder. Therefore, the objective of this study was to explore the transition experiences of college students with a mental health disorder. By identifying student transition activities and their perceptions of the value of these activities, along with experiences they encountered during the transition process, tailored interventions can be developed for use by adolescents, parents, health care providers, and mental health care providers.

1. Background

Transition planning with the college bound adolescent with a mental health disorder is an upstream approach for preventing destabilization of mental health in order to promote academic success, self-efficacy and improve quality of life while reducing personal and economic costs for the student and the university. Emerging research has shown the benefits of structured transition planning for adolescents with chronic physical illnesses and for those with developmental and disabling mental health conditions.^{29,32,36} While this literature typically focuses on the transition from the pediatric health care system to the adult health care system, a similar approach with the college-bound adolescent with a mental health disorder has the potential to substantially improve outcomes for this vulnerable population.

The importance of supporting youth with disabilities during the transition into adulthood was emphasized by a 2015 federal interagency workgroup that convened to develop collaborative strategies to ensure that all youth, “regardless of their challenges, including disability, are equipped to pursue a self-directed pathway to address their interests, aspirations and goals across all transition domains including community engagement, education, employment, health, and independent living...” (¹⁶, p. 11). In order to achieve this vision, one of the stated goals was that programs/processes should support youth to “develop self-determination and engage in self-directed individualized planning to prepare youth for postsecondary education, health care management, vocational training, and/or employment.” (¹⁶, p. 12). Currently, little is known regarding how adolescents with a mental health disorder prepare for the transition from post-secondary education into college life. While the JED Foundation maintains a comprehensive website with mental health resources for stress reduction and self-care strategies for college students (<https://jedfoundation.org/?s=college>), a comprehensive framework, similar to those used with transition planning guidelines for chronic physical conditions³³, is lacking for the college bound adolescent with a mental health disorder.

1.1. Guiding theoretical frameworks

The conceptualization of transition planning to promote mental health and well-being among college students with a mental health disorder integrates *Social Cognitive Theory (SCT)* with the *Salutogenesis Model* for health promotion resulting in adaptive coping and enhanced well-being. *SCT* focuses on both initiating and maintaining behaviors to promote health and has the central concept of reciprocal determinism which is the dynamic interaction of person, environment and behavior⁷. One assumption within this theory is that individuals learn through observing the behavior of others and the consequences of that behavior. Students entering the university bring with them not only their individual life experiences but are separating from family and community to develop their own identity. As they engage in new life experiences they are observing others and determining their trajectory for the future

through the actions they take. These actions lead to the development of confidence in their ability/capacity to achieve goals (i.e., self-efficacy).

SCT has been used to examine the development of motivation across the transition from secondary to higher education²⁵ as well as within the areas of transitions as it relates to self-management of career transitions.^{30,42} For this study, therefore, the constructs of self-efficacy and loneliness were assessed. Loneliness, as the more prominent experience of college students during the COVID-19 pandemic, was selected as a basic assumption of *SCT*, (i.e., learning through observing the behaviors of others and the consequences of those behaviors) was substantially altered.

The *Salutogenesis Model* focuses on the ability of the individual to self-reflect, mobilize resources and make positive adaptations to maintain and improve one's own health. (Antonovsky, 1979). This model suggests that individual life experiences form a sense of coherence (SOC) which assists in accessing and utilizing resources in order to successfully manage stressors. The SOC is comprised of three concepts; 1.) comprehensibility; individuals confronted with stressors must understand the challenges facing them 2.) meaningfulness; finding meaning in addressing stressors, and 3.) manageability; the ability to access needed resources for coping (Antonovsky, 1979). These factors provide a structure to conceptualize transitions in terms of understanding, meaning making, and managing instrumental tasks in one's life.

The salutogenesis theory of health promotion has been applied with a variety of populations and contexts such as medical student education⁴¹, children who have experienced trauma,⁸ individuals with chronic physical illness^{17,24} and nursing faculty and students in coping during the COVID pandemic.³⁸ For the purposes of this study, the salutogenesis model provided an orienting framework for considering transition activities that could contribute to an adolescent's sense of coherence, operationalized in this study as life satisfaction, which enhances an individuals' ability to secure and utilize resources in managing stressors confronted as a college student. Multiple factors contribute to a college bound adolescent's ability to transition successfully, and this initial exploratory study sought to describe these factors.

2. Aims

Therefore, the aims of this study were to: (1) explore participant experiences with planning for and experiencing the transition into college, and (2) examine associations between current health practices (i.e., self-management activities and the perceived importance of mental health promoting behaviors) and psychological factors (i.e., financial anxiety, self-efficacy, life satisfaction, and loneliness).

3. Material and methods

3.1. Design

A mixed methods design was used to examine the transition practices and experiences of college students with a self-reported history of a mental health disorder. A descriptive, correlational quantitative design examined their self-reported transition practices for college life, the perceived importance of transition behaviors, and psychological factors that may impact transition behaviors. A qualitative descriptive approach with semi-structured interviews revealed the subjective lived experiences of their transition into the college environment.^{34,35}

3.2. Participants

The participants of this study included individuals who were undergraduate or graduate students (ages 18-25) attending a state university (N=40,322) in the southwestern United States with a self-reported current or previous diagnosed mental health disorder.

3.3. Procedures

After obtaining university IRB approval, a variety of electronic recruitment methods were used. Primarily, student list-serves were used to access students at both the university's main campus and health science center through an email introducing the purpose of the study and the inclusion criteria. A link to the anonymous online survey via Qualtrics® was provided. At the end of the survey through a separate link, participants were given the opportunity to provide their contact information for (1) a drawing for one of four \$100 gift cards and (2) potential participation in a virtual interview. All participants who provided contact information for an interview were contacted and, if they responded, an interview was scheduled with one of the principal investigators. Interviews were conducted via Zoom by the first and second author at a time convenient for the participants. Verbal demographic data were gathered before starting the interview with a semi-structured interview guide. All interviews were recorded using the record function in Zoom and resulting transcripts were deidentified (when necessary) for analysis. Interview participants were given a \$20 gift card for their participation.

3.4. Data collection

3.4.1. Quantitative measures

3.4.1.1. Demographics. Basic demographic information, such as age, student designation, biological sex, sexual orientation, ethnicity, current residence, employment status, was gathered from participants as well as current and past psychopathology diagnoses. As a proxy for socioeconomic status, the 7-item Financial Anxiety Scale (FAS;⁵) was used. Each item with 7-point Likert scales ranges from 1 (Never) to 7 (always). The financial anxiety scores were calculated by adding up the seven items. The possible scores from 7 to 49 were achievable, with higher scores indicating higher level of anxiety. In a prior study, the Cronbach alpha coefficient in American college students was found to be 0.94.⁵ The FAS in this study had a high degree of reliability, Cronbach's $\alpha = .946$.

3.4.1.2. Mental health transition practices. Guided by Dillman,¹³ a 42-item questionnaire was developed by the first and second authors to assess transition practices across three domains. Section I explored the participant's considerations for selecting a university and the relative importance of these considerations on a four-point scale from one as "Not important" to four "Highly important" in their university of choice. A four-point Likert scale was used to avoid a neutral score and permit dichotomies along with enhancing reliability¹⁰. Example items were "geographical distance", "accessibility of public transportation," "availability of counseling services," and "requirement to live in dorms." Section II assessed the participant's actions taken to support mental health and a successful transition while at the university. Example of these "Yes/No" items included, "met with academic advisor to develop a plan of study for coursework to reduce stress," "accessed the student counseling center," and "filed for 504 accommodations." The final section assessed the perceived importance of 12 mental health promotion activities and asked participants to rate the level of importance on a four-point Likert scale from "Not very important" to "Very important." Example of items included sufficient sleep, having close friends, and utilizing mood tracking apps.

3.4.1.3. Psychological factors. *Satisfaction with Life Scale (SWLS;*¹²). The five-item questionnaire with a Likert scale ranging from strongly disagree (1) to strongly agree (7), assesses global life satisfaction through agreement or disagreement with positively worded statements such as "In most ways my life is close to my ideal." Favorable psychometric properties have been identified within a college sample including high internal consistency reliability, high test-retest reliability, and

predictable correlates with specific personality characteristics¹². Cronbach's alpha for the SWLS in this study is .840, indicating good internal consistency.

*General Self-Efficacy Scale (GSE;*³⁷). The 10-item scale with a Likert scale ranging from "Not at all true" (1) to "Exactly true" (4) assesses a general sense of perceived self-efficacy with positively worded statements such as "I can always manage to solve difficult problems if I try hard enough." Higher scores indicate a greater sense of self-efficacy. In previous studies in adults and adolescents in 23 countries, Cronbach's alphas reached .80 in the majority, ranging from .76 to .90. The GSE in this study had high reliability, Cronbach's $\alpha = .867$.

UCLA Loneliness Scale Version 3.0 (Hughes et al., 2004; Russell, 1996). This three-item scale assesses perceived social and relational connectedness and isolation. Three response options range from "hardly ever" to "often". Thorough psychometric evaluation across adult samples that included college students indicate high reliabilities and adequate validity (i.e., convergent and construct) (Russell, 1996). In this study, Cronbach's alpha for the scale was .773, representing good reliability.

3.4.2. Qualitative data

A semi-structured interview guide containing six open-ended questions was used to further assess college students' experiences in preparing for the transition to college and how they ultimately navigated the transition. The first question asked about their trajectory of mental health symptoms and obtaining a diagnosis. The remaining questions asked interviewees to reflect on things they wished they had known and things they wished they had done that would have better prepared them for the transition into college. Additionally, they were asked to identify barriers and facilitators to optimal mental health while in college.

3.5. Data analysis

For the quantitative data, statistical analysis was performed using IBM SPSS Statistics version 27 (IBM Corp, Armonk, NY). First, appropriate descriptive statistics of study variables were calculated. During inspection of the variables, it was noted that the financial anxiety scores were slightly positively skewed (Skewness = .263), however, substantial variability in scores was identified. The determination was made to include financial anxiety in the inferential statistical analyses of psychological variables. In the analysis processes, parametric tests were used because of large sample size and normal distribution shapes of four psychological variables on histograms and expected normal probability plots. Point-biserial correlations were used to examine the relationship between current transition activities and psychological factors. In order to assess the relationship between the perceived importance of mental health promoting behaviors and psychological factors, Spearman's Rank correlations were calculated. The choice of non-parametric test was based on the level of measurement for the perceived importance of mental health promoting behaviors, which were rated on a 4-point Likert scale. For the significance tests, the significance level was set at .05 with two-sided alternative hypotheses.

Qualitative descriptive methods were used to analyze the semi-structured interview data. Transcripts were independently coded by three researchers using HyperResearch® using a codebook developed by independent coding of the first two transcripts by three of the members of the research team with experience in qualitative data collection and analysis. After coding was complete, the researchers discussed the findings and consensus was identified within the coded data and agreement that data saturation had been achieved. For this mixed methods study, triangulation of findings occurred during the data analysis phase. As the quantitative data were analyzed, qualitative transcripts were reviewed for datums that provided additional contextual information. A manuscript presenting a more traditional qualitative descriptive examination of the qualitative data in isolation is forthcoming.

4. Results

A total of 222 individuals initiated the online survey and signed an online informed consent. After removing those that failed to indicate a history of a mental health disorder ($n=79$) and those > 25 years ($n=3$), a final sample of $N=140$ was achieved. Out of the survey sample, 29 students participated in a subsequent online interview. Table 1 provides a description of sample characteristics of all participants. Survey respondents were representative of the student demographics within the university with the exception of a higher percentage of females (89.3%) in the survey sample as compared to the university (48.2%). Also, there were no statistically significant differences in sample characteristics between the survey sample and the interview subsample.

For both the survey and interview participants, the average age was ~ 20 years with similar standard deviations. A more equitable distribution of female vs male sex assigned at birth was achieved with the subset of interview participants. This was also found with those reporting Hispanic/Latinx ethnic heritage among the interview participants (37.9% interviews vs 28.6% for the survey). The most prevalent conditions in our samples were anxiety disorders and depression. Of those that were interviewed, 69% ($n=20$) reported having two or more mental health diagnoses and two (7%) had previously attempted suicide. The average age of initial symptom presentation was reported ~ 12 years of age, however, average age at initial diagnosis was ~ 18 years. The mean of financial anxiety scores was 24.26 ($SD = 11.08$).

4.1. Considerations and perceived importance of factors to consider when transitioning to college

Participants indicated yes/no to a total of 21 potential considerations when selecting a college and also ranked their level of perceived importance of each consideration. Consistency between considering a factor and ranking it as important were found with items such as “geographical distance from home,” “living in a dormitory setting,” and

Table 1
Demographic Characteristics of Participants.

Variable	Survey (n=140)	Interview (n=29)
	n (%)	n (%)
Age	M=20.67 (SD=1.88)	M= 20.24 (SD=1.84)
Sex assigned at birth		
Female	125 (89.3)	21 (72.4)
Male	15 (10.7)	8 (27.6)
Sexual Orientation		
Heterosexual/straight	111 (79.3)	20 (69)
Gay or Lesbian/Homosexual	2 (1.4)	2 (6.9)
Bisexual	24 (17.1)	4 (13.8)
Prefer not to say/self-describe	3 (2.1)	1 (3.4)
Hispanic/Latinx		
Yes	40 (28.6)	11 (37.9)
No	100 (71.4)	17 (58.6)
Race		
Black or African American	10 (7.1)	1 (3.4)
White	103 (73.6)	25 (86.2)
Asian or Pacific Islander	9 (6.4)	0 (0)
Mixed Race	13 (9.3)	2 (6.9)
Other	5 (3.6)	0 (0)
History of mental health disorders		
Depression	93 (66.4)	19 (67.9)
Bipolar disorder	8 (5.7)	1 (3.6)
Anxiety disorders	113 (80.7)	18 (64.3)
Eating disorders	29 (20.7)	7 (25.0)
Alcohol abuse	13 (9.3)	2 (7.1)
Drug abuse	11 (7.9)	4 (14.3)
ADHD	32 (22.9)	8 (28.6)
Attempted suicide	25 (17.9)	6 (21.4)
Other	3 (2.1)	0 (0.0)

Note. Other: schizoaffective disorder, post-traumatic stress disorder, cyclothymia, dermatillomania.

“orientation/integration process for students’ engagement in college activities (Table 2). However, distinct discrepancies were identified between considering a factor vs. how important the participant believed that factor to be. For example, items addressing factors such as health-care services, environmental factors, and confidentiality of services found high levels of importance noted by participants but a much lower percentage of participants that had considered these factors prior to entering the university. For example, only 47.6% of participants considered the availability of counseling services when selecting a college, however 68.7% indicated this was an important factor to consider. Similarly, considering the typical wait for an appointment at the counseling center was considered by 34.4% of participants, yet 65.5% rated

Table 2
Considerations and Perceived Importance for Selecting a College.

Factors	Consideration, N(%)		Perceived importance, N (%)	
	No	Yes	Not Important	Mildly – Highly Important
1. Physical Factors				
Geographical distance from home	8 (6.3%)	119 (93.7%)	7 (5.7%)	115 (94.2%)
Accessibility of public transportation	90 (70.9%)	37 (29.1%)	55 (48.7%)	58 (51.3%)
Living in a dormitory setting	49 (38.9%)	77 (61.1%)	40 (34.8%)	75 (65.2%)
2. Environmental Factors				
Process for assigning roommates	54 (42.9%)	72 (57.1%)	35 (30.2%)	81 (69.9%)
Orientation and integration process for engagement in university activities	52 (41.3%)	74 (58.7%)	29 (25.4%)	85 (74.6%)
Training of residence hall directors regarding recognizing psychological distress	89 (71.2%)	36 (28.8%)	35 (31.0%)	78 (69.1%)
3. Policy				
The regulations regarding registering a student disability	95 (74.8%)	32 (25.2%)	60 (54.5%)	50 (45.5%)
4. Healthcare Services				
Peer mentor program	93 (73.2%)	34 (26.8%)	60 (55.0%)	49 (45.0%)
Services offered by the office of student disabilities	90 (70.9%)	37 (29.1%)	48 (43.2%)	63 (56.7%)
Available primary care providers and treatments for mental health disorders in the student health center	60 (47.6%)	66 (52.4%)	23 (21.7%)	90 (78.3%)
Available specialists in mental health on campus or in the community	57 (44.9%)	70 (55.1%)	22 (19.6%)	90 (80.4%)
Available counseling center on campus	66 (52.4%)	60 (47.6%)	36 (31.3%)	79 (68.7%)
Accredited counseling center on campus	77 (61.1%)	49 (38.9%)	32 (28.6%)	80 (71.4%)
The typical wait for an appointment in the counseling center	82 (65.6%)	43 (34.4%)	39 (34.5%)	74 (65.5%)
The costs associated with health center and counseling center	48 (38.1%)	78 (61.9%)	20 (17.4%)	95 (82.6%)
The types of insurance accepted	48 (38.1%)	78 (61.9%)	25 (21.7%)	90 (78.3%)
Available support groups on campus or close to the campus	110 (86.6%)	17 (13.4%)	65 (61.3%)	41 (38.7%)
Accessible pharmacy for prescriptions	54 (42.9%)	72 (57.1%)	30 (26.5%)	83 (73.4%)
5. Confidentiality				
Information shared with faculty regarding the 504 accommodations	98 (77.8%)	28 (22.2%)	59 (53.2%)	52 (46.8%)
The authorized staff members who can access counseling center records	79 (63.2%)	46 (36.8%)	36 (32.7%)	74 (67.3%)
Students interns within the counseling center	106 (84.1%)	20 (15.9%)	58 (54.7%)	48 (45.3%)

this as important.

Within the interviews, it was apparent that transition planning, as a formal process, was not engaged in routinely, and college selection was a more spontaneous and/or practical decision.

"My last couple semesters at a high school my counselor had to like corner me and asked me which college, I was going to and so just kind of panicked and said [school name] because my brother went here as well." (Male, 24 years)

"I had invitations to apply to Harvard and the other one was, it was another Ivy League school they had sent invitations. And then I kind of shopped around in Texas, and I'd gotten several scholarships to a lot of places. I wanted to go, but financially [school name] was a lot cheaper. So it ended up just being I stayed at home." (Male, 22 years)

4.2. Transition activities for entering a university

In assessing actions taken to support their successful transition into college life, the majority (69%) had stored their insurance information on their mobile device, and just over half (54.3%) had met with their academic advisor to develop a plan of study to reduce stress. While 48.1% transitioned to managing their own appointments with their health care provider, only 20.2% accessed the student counseling center during the first semester of college. Within the interviews, multiple barriers to engaging in campus-based mental health services were identified such as lack of appointment availability, complicated scheduling process, and limits on number of sessions.

"I asked for an appointment at the student counseling center but I had to wait like several weeks because they were obviously like really busy, so I was seen like late January, and I got my first appointment." (Female, 20 years)

"It's kind of like a cold environment (in the counseling center). It's more like okay just sit down, fill out this paper and we will get with you when we can. It's really kind of hard for someone who is kind of questioning if they even wanted counseling to go into it when they act like that." (Female, 19 years)

"They're super overbooked so they can like push you in and push you out. And so, like all of your sessions were like two weeks to four weeks apart so I only went to three like the whole semester because they are so far apart." (Female, 20 years)

Only nine (6.4%) participants had applied for 504 accommodations. When asked their reasons for not filing, 71.6% indicated they didn't know what that meant, 30.0% didn't think they would qualify, 18.3% did not believe they needed them, and 5.0% were concerned with the privacy of their information. Other reasons cited were related to a fear of self-advocacy, university processes, and thinking they should be able to do well without any outside support, ie. bootstrap thinking.

"I almost finished filing the form but then I realized I would have to do an in-person interview (this was in 2019), and I have really bad anxiety when it comes to interviews so I chickened out and did not complete the process." (Female, 20 years)

"Because I feel like this is something I could conquer. And for me, filing for that would just be sort of taking the easy way out." (Male, 22 years)

"The psychologist sent me over her notes, showing that she did diagnose me with generalized anxiety disorder and all these other things. I presented that to the lady at the student disabilities office and she's like, you know, we can only do so much with this. At the end of the day, I really wasn't allowed to get formal accommodations." (Female, 21 years)

4.3. Perceived importance of mental health promotion activities

Fig. 1 displays participants' perceived importance of behaviors that promote mental health. Having a close friend and getting sufficient sleep were indicated with some level of importance by 100% and 99% of participants, respectively. Eating healthy/avoiding junk food, engaging in regular physical activity, and avoiding illicit drugs were rated as "moderately" or "very" important by $\geq 75\%$ of participants. These activities were followed by being involved in campus life (59.8%), volunteering (56.7%), and meeting with a therapist/counselor (52%). Of note is that only 35.7% utilized a mobile app to promote health for a transition activity and 84.3% felt the use of mood tracking apps lacked importance.

The interviews provided additional context that further highlighted the struggle to consistently engage in activities/processes to support optimum mental health. The difficulty establishing meaning interpersonal relationships and the impact of substance use were common concerns.

"I didn't realize like how hard it would be to meet people and like make friends like our first week. But I mean, that's not something that like could have been prevented. Except maybe by like joining more stuff, but I just like I did really feel isolated and like I wasn't getting along with my roommates and it was just like kind of lonely." (Female, 20 years)

"The distance from home was quite a big thing that I didn't realize was going to affect me as much. It kind of feels like isolation out there, f you don't make friends immediately. It's kind of kind of hard to get used to." (Male, 20 years)

"They would, you know, like, whether it's like binge drinking or like just going to hook up with a different guy and I think I felt pressure to do that because like my friends were." (Female, 20 years)

"Not well, not [I would not cope] healthily... Sophomore year there was quite a bit of drinking and drug use." (Male, 22 years)

4.4. Transition activities, perceived importance, and psychological factors

No significant associations were found between financial anxiety, self-efficacy, life satisfaction or loneliness scores and involvement in transition practices (e.g., met with counselor, met with academic advisor). However, the Spearman's Rank correlations revealed that there were significant relationships between the perceived importance of mental health promoting behaviors and life satisfaction and self-efficacy. Participants who reported a high level of life satisfaction were more likely to consider getting sufficient sleep important ($\rho_s = .215$, $p = .016$) and limiting energy drinks and caffeine intake as unimportant ($\rho_s = -.197$, $p = .029$). The perceived importance of using mood tracking applications was inversely correlated with general self-efficacy ($\rho_s = -.236$, $p = .008$). Additionally, there was a positive correlation between higher scores on financial anxiety and the importance of managing financial resources ($\rho_s = .423$, $p < .001$).

5. Discussion

Although transition planning has been shown to result in improved outcomes, the findings of this study indicate that participants did not engage in a formal process of planning as it related to supporting their mental health during the transition into college. It may be that living with a mental health issue is not perceived to have an impact on their ultimate success in the collegiate environment. Moreover, there may be a lack of awareness that university life with potential for loss of sleep, unhealthy diet, alcohol and drug use coupled with academic stressors and loneliness can negatively impact mental health. Of note is that reflecting back on the process, participants indicated many factors were important, yet they were not factors that were actually considered a

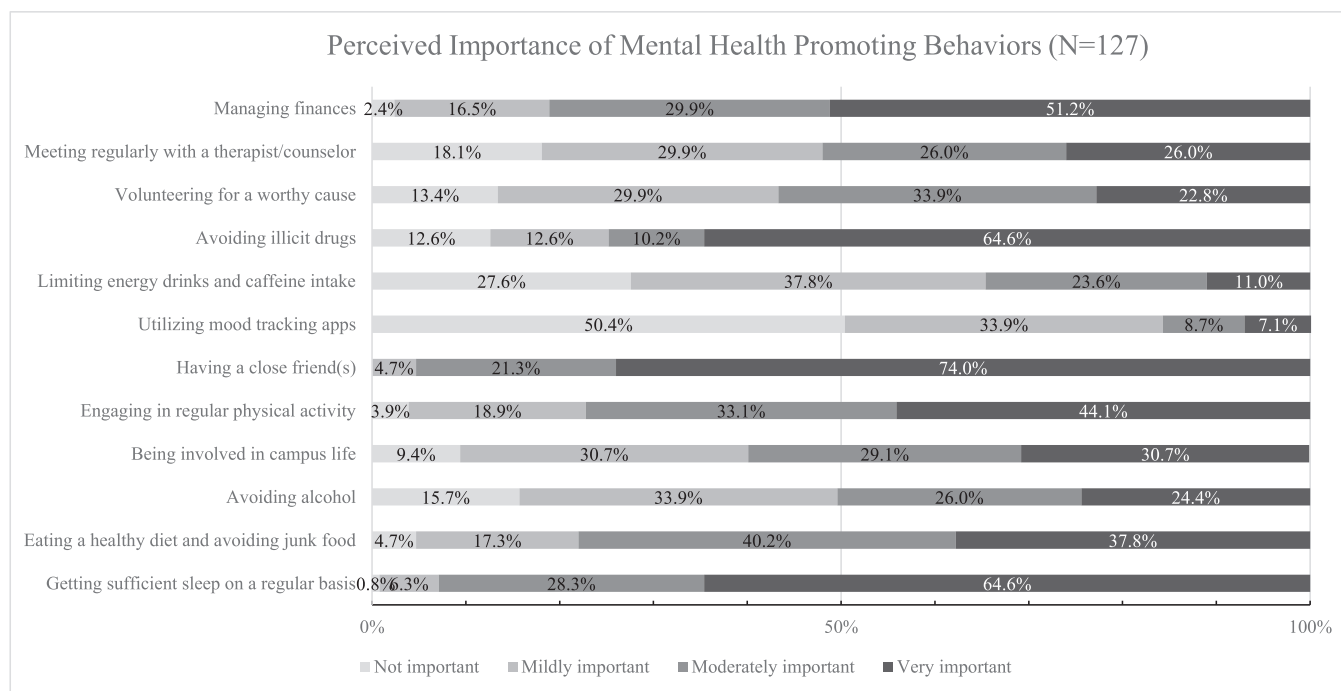


Fig. 1. Perceived Importance of Mental Health Promoting Behaviors (N=127).

priori when deciding/searching for a college. Considering these findings within the context of the Salutogenesis model, participants had deficiencies in their sense of coherence in understanding the potential challenges students with a mental health disorder would face³. These findings suggest the need for a more formalized and well-delineated transition process in identifying challenges for this vulnerable population

A key factor in providing a safety net for the student to promote mental health is filing for 504 accommodations and having these on file at the beginning of the semester³⁹. These accommodations are often related to extended test taking time, a quiet place for test taking and additional time to complete assignments. In the present study, however, the majority did not know about filing for these accommodations while others felt they did not qualify or that the use of accommodations was stigmatizing. Those that attempted to apply for 504 accommodations met roadblocks related to processes within the university. So, in spite of some participants seeking accommodations, the ability to mobilize needed resources (Antonovsky, 1979) was thwarted. All professionals involved in supporting adolescents up to and in to college life should be aware of the importance of proactively obtaining 504 accommodations. Template letters can be developed to minimize the burden on teachers/health care providers, and anticipatory guidance and advocacy would support the student in navigating the process to avoid potential roadblocks.

Sleep featured prominently among the most important aspects of maintaining optimal mental health, and those that placed more importance on sleep also reported higher life satisfaction, echoing previous literature²². Interestingly, the importance of limiting caffeinated beverages was considered less important by those with higher life satisfaction. This finding is counterintuitive to the positive association between sleep and life satisfaction, and it may be that highly caffeinated beverages are avoided without much thought given to why this is an important aspect of health promotion. In order to optimize mental health with the transition into college, there must be an awareness of how to promote mental health as well as recognition of destabilizing factors. Once these factors are known, the student must then be empowered to recognize they have the ability to successfully engage in these actions (i.e., self-efficacy). In this study, participants reporting

higher levels of self-efficacy reported higher life satisfaction and decreased loneliness supporting the use of *Social Cognitive Theory* as an orienting framework to study transition planning for the college-bound adolescent with a mental health disorder

This further suggests that interventions designed to improve self-efficacy as it relates to engaging in activities that promote one's mental health may be particularly impactful. Interestingly, the key mental health promoting behavior embraced by the sample was having a good friend. This may be an artifact of the impact of the COVID-19 pandemic with a substantial amount of recent literature describing the importance of maintaining social connectedness on adolescent and young adult mental health.^{21,28} While encouraging memberships in university organizations and other social events are designed to promote friendships, finding someone who has similar interests and values may be challenging, particularly in the first year of college. It may also be that aspects of a student's mental health disorder impact their ability/willingness to seek-out and participate in social activities. Including a discussion about what types of activities the students is interested in and their plans for becoming involved in those, will foster the development of self-efficacy and equip the future college student with a pathway for developing interpersonal relationships; a key for promoting health by all participants in this study.

There was a disconnect between what the participants considered in selecting a university and what they stated was important to consider in the selection process. Although many factors were identified as important, decision making did not appear to be based on these criteria. It was also apparent through interviews that participants were unaware of the impact certain factors within the university experience could have on their mental health which contributed to isolation, academic failures, and/or self-medication with alcohol or other substances. This ability to understand the challenges of college life in order to mobilize resources and make positive adaptations is essential to preventing destabilization.

This lack of awareness of the impact of college life on mental health was also reflected in the low percentage of students obtaining an appointment with the counseling center during their first semester on campus. This likely is due to seeking help when a crisis arises as opposed to taking an upstream mental health maintenance and prevention approach. During the student interviews several students complained of

not being able to obtain an appointment in a timely manner when they did seek help.

5.1. Implications

Processes need to be established and implemented with college bound adolescents with a mental health disorder(s) to prepare them for a successful transition into college life. Healthcare providers working with adolescents require education on the importance of following the USPSTF guidelines for anxiety and depression screening and then engaging high risk adolescents and caregivers in a transition process. According to the study findings, specifically enhancing knowledge regarding 504 accommodations and their purpose when an adolescent is diagnosed with a mental health disorder is essential. This could be facilitated by adding a 504 accommodations template in electronic health records which could be easily modified for each patient. This letter could serve as a reminder to request accommodations. Although each university may have different requirements for filing 504 accommodations, this template could be a starting point for initiating the process.

The importance of taking a pro-active, health promoting approach by connecting with the counseling center, the office of student disabilities, and their academic advisor as first steps when attending a university should be emphasized. It is also important that strategies be developed to promote engaging in college life. Ideally a close friend would attend the same university as it has been demonstrated that persistently lonely adolescents attributed their exclusion from social groups as being due to negative personal characteristics while inclusion was attributed to being due to circumstance⁴⁰. For students in recovery it is essential that they seek out support groups on or near the campus to maintain their abstinence/sobriety.

In addition, it may be important to provide a broad range of services relevant to factors that influence mental health because situational factors, such as financial situation, may play a detrimental role in the mental health and in academic performance among college students⁷. Participants in this study reported a wide range of financial anxiety, which indicates diverse anxiety experiences due to financial situation. In light of the fact that college students with low self-efficacy were less likely to seek financial help in college students²⁷, self-efficacy-enhancing programs can improve financial distress as well as psychological well-being among those with a mental health disorder.

5.2. Limitations

Several limitations to the current study should be mentioned. First, the sample was predominantly female from a single college institution which limits the ability to generalize to other populations. Second, self-report was the only modality of data collection. This limits study findings in that (1) mental health diagnoses were not confirmed with clinical interviews, and (2) social desirability may have led to over-reporting of transition considerations (i.e., what they should have thought of vs what they actually thought of). Future research using clinical interviews would allow comparisons between those individuals with current psychopathology vs. those without. Third, the method of convenience sampling likely attracted individuals already higher in awareness of the state of their mental health potentially biasing study findings. Fourth, the COVID-19 pandemic that occurred during study procedures substantially impacted typical college life. Dormitory closures and transitioning to on-line courses led to isolation and additional stressors which likely impacted the results of the survey. Finally, there may be transition activities that were undertaken by students that were not captured through the survey or interviews. An important next step will be to undertake proactive, longitudinal examination of the transition experiences of college students with a mental health disorder.

6. Conclusion

With the numbers of students entering universities with mental health disorders, it is essential that preparation for transitioning to college life be undertaken within primary care and mental health settings in addition to high school counseling centers. A formalized transition process that begins as the student contemplates higher education extending through university life is needed. As a part of this, increased streamlining of processes for obtaining 504 accommodations at the collegiate level is also needed. Due to the high demand for university counseling services contracting with tele-mental health providers could serve to reduce the burden on strained university resources.

Ethics statement

The work described in this manuscript was been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki). The manuscript is in line with the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals and we aimed for the inclusion of representative human populations (sex, age and ethnicity). We note the limitation of primarily female and white sample.

Role of funding source

Texas Tech University Health Science Center, School of Nursing provided financial support for the conduct of this project. They had no involvement in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication.

CRediT authorship contribution statement

Cara C. Young: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing – original draft; Writing – review & editing. **Susan J. Calloway:** Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing – original draft; Writing – review & editing. **Nani Kim:** Formal analysis; Roles/Writing – original draft; Writing – review & editing.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Susan Calloway reports financial support was provided by Texas Tech University Health Sciences Center.

Data availability

Data will be made available on request.

References

- American College Health Association (2012). *American College Health Association-National College Health Assessment II: Reference Group Executive Summary Spring 2011*. Linthicum, MD: American College Health Association; 2011. Retrieved from (https://www.acha.org/documents/ncha/ACHA-NCHA-II_ReferenceGroup_ExecutiveSummary_Spring2011.pdf).
- American College Health Association (2022). *American College Health Association-National College Health Assessment II: Reference Group Executive Summary Fall, 2021*. Silver Spring, MD: American College Health Association; 2022. Retrieved from (https://www.acha.org/documents/ncha/NCHA-III_FALL_2021_REFERENCE_GROUP_EXECUTIVE_SUMMARY.pdf).
- Antonovsky A. The salutogenic model as a theory to guide health promotion. *Health Prom Intern*. 1996;11(1):11–18.

- 4 Arain M, Haque M, Johal L, Mathur P, Nel W, Rais A, Sandhu R, Sharma S. Maturation of the adolescent brain. *Neuropsychiatr Dis Treat*. 2013;9:449–461. <https://doi.org/10.2147/NDT.S39776>.
- 5 Archuleta KL, Dale A, Spann SM. College students and financial distress: exploring debt financial satisfaction and financial anxiety. *J Financ Couns Plan*. 2013;24(2): 50–62.
- 6 Arnett JJ. *Emerging adulthood: The winding road from the late teens through the twenties* (2nd ed.). New York, NY: Oxford University Press; 2014. <https://doi.org/10.1093/acprof:oso/9780199929382.001.0001>.
- 7 Bandura A. *Social foundations of thought and action: a cognitive social theory*. Englewood Cliffs, NJ: Prentice-Hall; 1986.
- 8 Braun-Lewensohn O. Coping and social support in children exposed to mass trauma. *Curr Psychiatr Rep*. 2015;17:46–56.
- 9 Cadaret MC, Bennett SR. College students' reported financial stress and its relationship to psychological distress. *J Coll Couns*. 2019;22(3):225–239. <https://doi.org/10.1002/joc.12139>.
- 10 Chang L. A psychometric evaluation of 4-Point and 6-Point Likert-type scales in relation to reliability and validity. *Appl Psychol Measurement*. 1994;18(3):205–215.
- 11 Chen H, Cohen P, Kasen S, Johnson JG, Berenson K, Gordon K. Impact of adolescent mental disorders and physical illnesses on quality of life 17 years later. *Arch Pediatr Adolesc Med*. 2006;160(1):93–99. <https://doi.org/10.1001/archpedi.160.1.93>.
- 12 Diener E, Emmons RA, Larsen RJ, Griffo S. The satisfaction with life scale. *J Personal Assess*. 1985;49(1):71–75. <https://doi.org/10.1207/s15327752jpa4901.13>.
- 13 Dillman D. *Mail and internet surveys: The tailored design method*. New York: Wiley; 2007.
- 14 Eisenberg D, Gollust SE, Golberstein E, Hefner JL. Prevalence and correlates of depression, anxiety, and suicidality among university students. *American Journal of Orthopsychiatry*. 2007;77(4):534–542.
- 15 Erikson EH. *Identity: Youth and crisis vol 8* New York: WW Norton. Feiman-Nemser; 1968:S239–S256.
- 16 Federal Partners in Transition Workgroup (2015). The 2020 Federal youth transition plan: a federal interagency strategy. Youth.gov. Retrieved from (https://youth.gov/docs/508_EDITED_RC_FEB26-accessible.pdf).
- 17 Galletta M, Cherchi M, Cocco A, Lai G, Manca V, Pau M, Tatti F, Zambon G, Deidda S, Origa P, Massa E, Cossu E, Bui F, Contu P. Sense of coherence and physical health-related quality of life in Italian chronic patients: the mediating role of the mental component. *BMJ Open*. 2019;9, e030001. <https://doi.org/10.1136/bmjopen-2019-030001>.
- 18 Groton K, Sund ER, Bjerkeset O. Mental health, academic self-efficacy and study progress among college students- the SHoT study, Norway. *Front Psychol*. 2019;10. <https://doi.org/10.3389/fpsyg.2019.00045>.
- 19 Gruttadaro D, Crudo D. College students speak: a survey. *Natl Alliance Mental Illness*; 2012. (www.nami.org/namioncampus).
- 20 Hathaway WR, Newton BW. *Neuroanatomy, prefrontal cortex*. StatPearls [Internet]. *Treasure Island (FL)*. StatPearls Publishing; 2023. (<https://www.ncbi.nlm.nih.gov/books/NBK499919/>).
- 21 Jones SE, Ethier KA, Hertz M, DeGue S, Le VD, Thornton J, Lim C, Dittus PJ, Geda S. Mental health, suicidality, and connectedness among high school students during the COVID-19 pandemic - adolescent behaviors and experiences survey, United States, January-June 2021. *MMWR supplements*. 2022;71(3):16–21. <https://doi.org/10.15585/mmwr.su7103a3>.
- 22 Kelly WE. *Sleep-length and life satisfaction in a college student sample*. In: *College Student Journal*. 38. Gale Academic OneFile; 2004:428. (link.gale.com/apps/doc/A123321902/AONE?u=txshrcad2598&sid=bookmark-AONE&xid=737ab22d).
- 23 Kolk S, Rakic P. Development of prefrontal cortex. *Am Coll Neuropsychopharmacol*. 2021;47:41–57. <https://doi.org/10.1038/s41386-021-01137-9>.
- 24 Kristofferzon ML, Engström M, Nilsson A. Coping mediates the relationship between sense of coherence and mental quality of life in patients with chronic illness: a cross-sectional study. *Qual Life Res*. 2018;27(7):1855–1863. <https://doi.org/10.1007/s11136-018-1845-0>.
- 25 Kyndt E, Donche V, Coertjens L, van Daal T, Gijbels D, Van Petegem P. Does self-efficacy contribute to the development of students' motivation across the transition from secondary to higher education? *Eur J Psychol Educ*. 2019;34:457–478. <https://doi.org/10.1007/s10212-018-0389-6>.
- 26 Lee J, Solomon M, Stead T, et al. Impact of COVID-19 on the mental health of US college students. *BMC Psychol*. 2021;9, 95. <https://doi.org/10.1186/s40359-021-00598-3>.
- 27 Lim HN, Heckman SJ, Letkiewicz JC, Montalto CP. Financial stress, self-efficacy, and financial help-seeking behavior of college students. *J Financ Couns Plan*. 2014;25(2): 148–160. <https://ssrn.com/abstract=2537579>.
- 28 Magson NR, Freeman JYA, Rapee RM, et al. Risk and protective factors for prospective changes in adolescent mental health during the COVID-19 pandemic. *J Youth Adolesc*. 2021;50:44–57. <https://doi.org/10.1007/s10964-020-01332-9>.
- 29 Marani H, Fujioka J, Tabatabavakili S, Bollegala N. Systematic narrative review of pediatric-to-adult care transition models for youth with pediatric-onset chronic conditions. *Child Youth Serv Rev*. 2020;118. <https://doi.org/10.1016/j.chilcyouth.2020.105415>.
- 30 Perez-Lopez MC, Gonzalez-Lopez MJ, Rodriguez-Ariza L. Applying the social cognitive model of career self-management to the entrepreneurial career decision: the role of exploratory and coping adaptive behaviors. *J Vocat Behav*. 2019;112: 255–269. <https://doi.org/10.1016/j.jvb.2019.03.005>.
- 31 Ratelle CF, Simard K, Guay F. University students' subjective well-being: the role of autonomy support from parents, friends, and the romantic partner. *J Happiness Stud*. 2013;14(3):893–910. <https://doi.org/10.1007/s10902-012-9360-4>.
- 32 Ravens E, Becker J, Pape L, Ernst G. *J Trans Med*. 2020;2(1), 2020009. <https://doi.org/10.1515/jtm-2020-0009>.
- 33 Roberts G, Vazquez-Ortiz M, Knibb R, Khaleva E, Alviani C, Angier E, Blumchen K, Timmermans F. EAACI Guidelines on the effective transition of adolescents and young adults with allergy and asthma. *Allergy*. 2020;75:2734–2752. <https://doi.org/10.1111/all.14459>.
- 34 Sandelowski M. Whatever happened to qualitative description? *Res Nurs Health*. 2000;23:334–340. [https://doi.org/10.1002/1098-240X\(200008\)23:4<334::AID-NUR9>3.0.CO;2-G](https://doi.org/10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G).
- 35 Sandelowski M. What's in a name? Qualitative description revisited. *Res Nurs Health*. 2010;33:77–84. <https://doi.org/10.1002/nur.20362>.
- 36 Schmidt A, Llango SM, McManus M, Rogers KK, White PH. Outcomes of pediatric to adult health care transition interventions: an updated systematic review. *J Pediatr Nurs*. 2020;51:92–107. <https://doi.org/10.1016/j.pedn.2020.01.002>.
- 37 Schwarzer R, Jerusalem M. Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, *Measures in health psychology: A user's portfolio. Causal and control beliefs*. 1995:35–37.
- 38 Shorey S, Ang E, Baridwan NS, Bonito SR, Dones LBP, Flores JLA, Freedman-Doan R, Fukahori H, Hirooka K, Koy V, Lee WL, Lin CC, Luk TT, Nantsupawat A, Nguyen ATH, Nurumal MS, Phanpaseuth S, Setiawan A, Shibuki T, Sumaiyah Jamaluddin TS, Kunaviktikul W. Salutogenesis and COVID-19 pandemic impacting nursing education across SEANERN affiliated universities: a multi-national study. *Nurse education today*. 2022;110, 105277. <https://doi.org/10.1016/j.nedt.2022.105277>.
- 39 The Americans with Disabilities Act (2012) The Americans with Disabilities ACT Title III Regulations. ADA.gov. Retrieved from (<https://www.ada.gov/>).
- 40 Vanhalst J, Luyckx K, Petegem S, Soenens B. The detrimental effects of adolescents' chronic loneliness on motivation and emotion regulation in social situations. *J Youth Adolesc*. 2018;47(1):162–176. <https://doi.org/10.1007/s10964-017-0686-4>.
- 41 Vinje HF, Ausland LH, Langeland E. The Application of Salutogenesis in the Training of Health Professionals. In: Mittelmark MB, ed. *The Handbook of Salutogenesis*. Springer; 2016:307–318.
- 42 Wendling E, Sagas M. An application of the social cognitive career theory model of career self-management to college athletes' career planning for life after sport. *Front Psychol*. 2020;11:2020. <https://doi.org/10.3389/fpsyg.2020.00009>.
- 43 WISQARS. *Centers for Disease Control and Prevention. Leading death visualization tool*. 2021. Retrieved from (<https://wisqars.cdc.gov/data/lcd/home>).