IDENTIFYING FACTORS ASSOCIATED WITH HEALTHCARE TRANSITION READINESS IN COLLEGE FRESHMEN

By

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(Under the Direction of Ronald Blount, Ph.D.)

ABSTRACT

To date, the majority of healthcare transition readiness literature has focused primarily on pediatric patients with a chronic health condition. As such, less is known about healthcare transition readiness skills for emerging adults (EAs). Utilizing a developmental framework, this study aimed to assess the relationships between adjustment to college, healthcare transition readiness, and the role of University Health Center (UHC) utilization in a sample of college freshmen. A total of 197 EAs (*M*age=18.35; *SD*=52, 72.6% female) participated in the study and reported on their perceived adaptation to college, healthcare transition readiness, and utilization of UHC services. Overall, aspects of adaptation was significantly correlated to healthcare transition readiness. Females, and those utilizing UHC services reported higher healthcare transition readiness. Understanding competent development throughout this unique time period may provide valuable directions for informing healthcare transition readiness interventions, regardless of the health status of the EA.

INDEX WORDS: Emerging adulthood, Healthcare transition readiness, Perceived adaptation

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B.S., Bridgewater State University, 2011

M.S., University of Georgia, 2016

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2019

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CHAPTER 1

IDENTIFYING FACTORS ASSOCIATED WITH HEALTHCARE TRANSITION READINESS IN COLLEGE FRESHMEN

Emerging adulthood refers to the fluid and transitional period between adolescence and early adulthood, often distinguished as the ages of 18-25 (Arnett, 2000). Emerging adulthood is a unique developmental period, characterized by changes in developmental expectations, including increased independence, self-exploration, and greater personal responsibility (Arnett, 2000; Henin & Berman, 2016). Given that emerging adulthood is often influenced by socio-economic factors (e.g., access to post-secondary education), it is considered heterogeneous and influenced by broader changes in cultural expectations. Within recent history, Arnett (2006) detailed observable changes in societal expectations and their influence in "delaying" adulthood. Previously, the transition to adulthood was marked by entry to the workforce, getting married, and starting a family. However, as the number of adults pursuing higher educations has increased, achieving traditional milestones of adulthood (e.g., marriage) has been delayed and emerging adulthood is now representative of a somewhat "gray area" between adolescence and adulthood. In the United States, emerging adults (EAs) are building skills in the areas of social functioning, academics, conduct, work, and romantic relationships. As EAs gain greater independence, and general well-being tends to improve with positive growth in self-esteem and self-sufficiency (Arnett, 2007). During this unique period, EAs are able to engage in self-

exploration, having emerged from the dependency of childhood/adolescence but not yet having fully embraced the enduring responsibilities of adulthood (Arnett, 2000).

For almost two decades, researchers have aimed to define this developmental stage, with growing interest in understanding changes throughout this period as well as identifying benchmarks for successful adaptation (Henin & Berman, 2016). Using self-assessment of functioning in appropriate developmental areas, early perceptions of functioning has demonstrated predictive significance for future adaptation in adulthood. For example, Roisman and colleagues (2004) found that self-assessments of friendship, academic performance, and conduct at age 20 were predictive of functioning in those domains approximately 10 years later in young adulthood. However, work and romantic relationships were not significantly related across time, indicating that stability in these domains may emerge later in adulthood. Given the fluidity and heterogeneity of emerging adulthood, some have argued that the attainment of developmental milestones should rely on one's subjective sense or perceived satisfaction of having reached adulthood/task mastery (Arnett, 2007).

Transition to College

For EAs, the transition from secondary to higher education offers a unique opportunity to build competency in developmentally appropriate skills as well as foster independence to support future success. Students' transition and early functioning in college is key to predicting future academic achievement and satisfaction. (Tinto, 1975). Most college students are living away from home for the first time, leaving day-to-day dependency of their caregivers behind, and opening an opportunity to build self-reliance and independence. However, this transitional period is also susceptible to maladaptation. With increased freedom and decreased parent-imposed structure, some students may experience difficulties that hinder their success. This period may be

considered stressful for students who are ill-prepared for the environment they are entering and lack the knowledge of what skills they must acquire (Brinkworth et al., 2013; Hughes & Smail, 2015). As such, Blichfeldt and Gram (2013) would argue that the university may play an imperative role in fostering a smooth transition by focusing on supporting changes in psychological processes that would allow students to adopt new ways of thinking and learn new behavior to adapt to their new environment. It has been proposed that universities may be able to provide ample psychosocial support for students to increase self-awareness of changes and foster flexible thinking skills. Identifying where universities should target interventions to decrease dropout rates has been much debated, though it can be concluded that targeting aspects of the student experience can be successful for improving the transition and reducing overall distress (Harvey, Drew, & Smith, 2006; Lawrie et al., 2013). While much research has been devoted to assessing and improving the general transition to higher education for EAs, there has been less focus on the specific transition of healthcare responsibilities in EAs during the college years.

Healthcare Transition Readiness

Within the healthcare field, there has been an increasing emphasis on the transition from pediatric to adult-oriented care in patients with a chronic health condition to ensure consistency in disease management. Adolescents' chronological age has repeatedly been examined as it relates to transition of healthcare responsibility from parents/caregivers to adolescents and young adults (Reed-Knight, Blount, & Gilleland, 2014), with the transition process typically beginning in early adolescence. By emerging adulthood, it is expected that EAs will have assumed the majority of their healthcare responsibility and parent involvement has weaned. In their statement on healthcare transitions for young adults with special healthcare needs, The American Academy of Pediatrics (2002) highlights the importance of a well-planned transition program to optimize

positive health outcomes and enhance individual's abilities to manage their illness and assume adult roles/functioning. Understanding some of the theoretical models that enhance transfer of care from pediatric to adult providers may help identify areas for intervention and tools for assessing readiness and success.

As a response to the changing understanding and complex nature of transition readiness, the Social-ecological Model of Adolescent and Young Adult Readiness for Transition (SMART; Schwartz et al., 2011) was developed as a comprehensive theoretical model. SMART incorporates both the modifiable subjective factors (e.g., knowledge, skills/efficacy, beliefs/expectations, goals, relationships, psychological functioning) and pre-existing objective factors (e.g., socio-demographic/culture, access/insurance, medical status and risk, neurocognitive/IQ), as well as the interplay between both. Additionally, the SMART model considers the interaction between the patient, parents, provider, and their unique subjective experiences. One salient feature of this theoretical model is the view that the patient's level of developmental maturity is both a modifiable factor and important variable associated with successful transfer to adult care. Therefore, if transition planning should take developmental maturity into account and be tailored according, how are providers assessing this information? While chronological age is an easily obtained index that may provide a rough approximation of cognitive and emotional development (Reiss, Gibson, & Walker, 2005), it is not a precise means of assessing developmental maturity as reflected in competently negotiating the demands of life, and is a poor index of transition readiness (Reed-Knight et al., 2014). One may consider that difficulties assuming health care responsibility may be partially attributed to either the presence of excessive additional developmental demands, or difficulty addressing the demands that are present in various domains (e.g., leaving home, romantic relationships, developing autonomy;

Reiss, 2012). Further, it is possible that competence in broad areas of functioning (e.g., academics, social functioning) may facilitate and support competence in the specific area of healthcare transition readiness (Reed-Knight et al., 2014).

Understanding the intricacies of EA development may help elucidate important factors associated with transition readiness. In addition to the aforementioned models, Holmbeck & Shapera (1999) provide a detailed framework for understanding the interaction between changes during this period, modifiable variables, and developmental outcomes. From the perspective of primary developmental changes of adolescence, EAs undergo significant biological (puberty), psychological (changes to self-esteem, depression, anxiety), and cognitive changes. Demographic and interpersonal variables such as ethnicity, family structure, gender, individual response to developmental change, neighborhood/community factors, and socioeconomic status are thought of as potential moderators impacting developmental outcomes. Notably, Holmbeck & Shapera (1999) also incorporate the interpersonal contexts of adolescent development including family, peer, school, and work, as salient and transactional domains between the adolescent and developmental outcomes. In their framework, developmental domains of adolescence includes; achievement, autonomy, identity, intimacy, psychosocial adjustment, and sexuality. While not explicitly included in this model, healthcare transition readiness is an additional domain of developmental outcomes.

To date, the majority of healthcare transition readiness literature has focused primarily on pediatric patients with a chronic health condition. Little attention has been paid to the transition process for healthy adolescents into adulthood. Examination of transition readiness in a sample of EAs with a chronic medical condition compared to healthy peers revealed significantly higher levels of transition readiness, greater self-involvement in completing medical tasks, and lower

levels of parent involvement in medical care for EAs with a medical condition (Eaton et al., 2017). As the risk for potential detrimental health outcomes is greater for EAs with a medical condition, it is understandable that more focus has been placed on successful transition to adult care for youth with a chronic health condition. However, this leaves a notable gap for healthy EAs, as they may not be exposed to the scaffolding necessary to successfully transition. Utilizing theoretical models from the pediatric chronic illness literature may help inform salient processes for EAs without a chronic health condition. As the majority of health conditions are diagnosed in adulthood, continuity of care between pediatric and adult care should be imperative regardless of health status. Drawing from the pediatric oncology literature, one significant barrier to successful transition to adult care is being asymptomatic, which limits motivation and engagement with health-promoting behaviors. (Freyer & Kibrick-Lazear, 2006; Schwartz et al., 2011). Healthy EAs both experience limited transition support training in pediatric care and have low motivation due to being asymptomatic. This may result in healthy EAs being at significant risk for low transition readiness. Therefore, understanding factors that are associated with the development of transition readiness in healthy EAs is imperative.

Some aspects of college life may serve as a potential avenue for intervention to increase healthcare transition readiness for healthy EAs. It is estimated that health services exist on over 1,500 college campuses nationally (Turner & Keller, 2015). The presence of a university health center (UHC) alleviates some potential barriers to access to care through the convenience of on-campus services. Students do not have to navigate their communities to find healthcare but are provided these amenities within the proximity of the campus. One study compiled data from 23 universities (16 public and 7 private institutions) and found that over 802,255 students access UHC resulting in over 4.17 million patient encounters (Turner & Keller, 2015). The majority of

visits (60%) were classified as primary care, followed by miscellaneous (31%), mental health (13%) and vaccination (9%). Of unique importance, utilization of UHC services was higher among minority groups (African American, Asian, Hispanic) than with Whites (Turner & Keller, 2015), thus suggesting that UHC may be of particular value for minorities.

Research to date has primarily targeted UHCs as the catalyst to provide health-based interventions to promote positive health behaviors. For example, UHCs have been a site for screening for tobacco use and providing brief intervention to reduce long-term health risks (Sutfin et al., 2012). UHCs have also been used to assess other risky health behaviors, including sensation-seeking and alcohol-impaired driving, as a part of a routine-health screening at clinic visits (Zakletskaia et al., 2009). The presence of a UHC on campus is also associated with benefits for students when compared to campuses without that resource. Eisenberg et al (2012) identified that having a health center on campus was associated with additional sexual health resources for students. UHCs are also an environment where EAs may have their first opportunities to independently make appointments for healthcare services, attend appointments, and assume other healthcare management responsibilities without parental involvement. As such, UHCs may provide a unique training arena for increasing transition readiness in the context of a relatively sheltered environment.

Proposed Study

This study aims to assess perceived adaptation to college and utilization of the UHC as they relate to healthcare transition readiness in healthy EAs in their first year of college. Considering the salient domains associated with successful transition to college as well as the specific skills associated with healthcare transition readiness, the present study aims to explicate factors associated with healthcare transition readiness during this important developmental

phase. As stated previously (Arnett, 2007), emphasis on understanding one's subjective experience and perceived satisfaction is essential in emerging adulthood. Accordingly, the first study aim is to examine college students' perceived adaptation to college using a subjective measure of general satisfaction in college, adaption to workload, adaptation to caring for daily and health needs, and adaptation to making friends. This measure will be evaluated using statistical procedures for determining reliability and validity. It is expected that perceived adaptation to college and overall satisfaction will be related to greater transition readiness. Second, the college campus presents a unique health care opportunity for students to hone skills and navigate a healthcare system independent of parental involvement. Accordingly, those accessing UHC services are expected to have acquired a greater sense of transition readiness. However, use of the UHC is not expected to be associated with general adjustment to aspects of college life. Finally, exploratory hierarchical regression analyses will be conducted to model the relationship between demographic factors, perceived adaptation, and UHC utilization on healthcare transition readiness, as guided by correlational analyses.

CHAPTER 2

Method

Procedures

Participants were recruited through an online research pool at a university in the Southeastern United States. A description of the study and compensation (1 hour of departmental research participation credit) was provided to participants prior to enrollment. Students interested in participating were invited to complete study inventories in the researcher's lab space. Following consent procedures, participants completed study measures hosted on a secure online survey system (Qualtrics). Inclusion criteria were limited to college freshmen who identified as "healthy" (e.g., denying history of a chronic health condition), and were enrolled in a psychology course with a research participation requirement. All study procedures were approved by the institutional review board at the investigator's university prior to recruitment.

Participants

Participants included 197 undergraduate students who indicated they were medically healthy. EAs ranged in age from 18-20 (M = 18.35 years; SD = .52 years) and all identified as college freshman. The majority of EAs identified as female (n = 143; 72.6%) and Caucasian (n = 145; 73.6%). With regard to utilization of UHC services, less than half of EAs (n = 81; 41.1%) endorsed a history of seeing medical providers on-campus

Measures

Demographics

Participants completed a self-report measure of demographic (e.g., sex, gender, race) information, as well as utilization of the on-campus UHC.

Perceived Adaptation

Participants were asked to assess their perceived satisfaction with/adaptation to aspects of college. The following questions were administered; "How satisfied have you been with your college experience thus far?," "How well have you adapted to your workload in college?," "How well have you adapted to taking care of your daily needs in college (e.g., cooking, laundry)?," "How well have you adapted to taking care of your health/fitness needs in college?," and "How well have you adapted to making friends in college?" Participants responded using a 5-point Likert scale from 'Not at all' to 'Completely.' Internal reliability and validity are reported in the results section.

Transition Readiness

Transition Readiness Assessment Questionnaire (TRAQ). The Transition Readiness Assessment Questionnaire (TRAQ; Wood et al., 2014) was completed to assess individual's perceived abilities to manage various aspects of their healthcare needs associated with transition readiness. Participants were asked to rate their ability-level on various health-related tasks using a 5-point Likert scale ranging from 'No, I do not know how' to 'Yes, I always do this when I need to.' Items for each subscale were summed and an average was created for each of the five subscales; Managing Medications, Appointment Keeping, Tracking Health Issues, Talking with Providers, and Managing Daily Activities. Greater perceived abilities to manage healthcare tasks

are indicated by higher scores. Initial validation of this measure demonstrated high reliability (Cronbach's α = .94) in a sample of EAs (Wood et al., 2014) consistent with the present sample (Cronbach's α = .90).

Data Analytic Plan

All data analyses were conducted using IBM SPSS Statistics, version 24 (IBM Corp, Armonk, NY). Preliminary analyses were conducted to identify demographic variables significantly correlated with study variables. To assess the validity of the subjective questions administered, scale reliability was conducted using Cronbach's alpha and .70 was considered as the acceptable cutoff (Hudson, 1982). Pearson product moment correlational analyses were conducted to assess the relationship between perceived adaptation and transition readiness (Managing Medications, Appointment Keeping, Tracking Health Issues, Talking with Providers, and Managing Daily Activities). Assumptions of Pearson product moment correlations were examined to assess for normality, linearity, homoscedasticity, and outliers. Paired sample *t*-tests were conducted to evaluate mean level differences in transition readiness between college students who do and do not utilize UHC services, with Cohen's *d* used to determine effect sizes. Hierarchical regression analyses were conducted to assess the contribution of demographic factors, adaptation to college, and UHC usage to the variance in transition readiness.

Power Analyses

Power analyses were conducted a priori using G*Power to determine the appropriate sample size for the proposed analyses. To conduct Pearson product moment correlations with β = .95, α = .05, and a medium effect size (.30), a sample of 111 participants is required. To detect

paired-sample differences, using $\beta = .95$, $\alpha = .05$, and a medium effect size (.50), a sample of 88 participants will be necessary.

CHAPTER 3

Results

Demographic Covariates

Correlational analyses between demographic variables (e.g., gender, age, and ethnicity) indicated significant relationships between gender and one adjustment item (e.g., health/fitness needs) as well three transition readiness subscales (e.g., managing medications, tracking health issues, managing daily activities) and the overall transition readiness score, with females scoring higher. As such, partial correlations were conducted controlling for gender for these items.

Adjustment to College

Review of inter-correlations between items of self-reported satisfaction and adjustment to aspects of college are presented in Table 2. Results indicate that all items were significantly correlated. Also, each item was significantly correlated (*r's* = .65-.71) to the overall adjustment score. Reliability analyses of all 5 items resulted in an acceptable Cronbach's $\alpha = .70$.

Adjustment to College & Transition Readiness

Review of correlations between aspects of perceived satisfaction/adaptation to college and transition readiness are presented in Table 2. Overall adjustment was related to transition readiness overall, as well as managing medications, talking with providers, and managing daily activities. Health/fitness adjustment was significantly correlated to overall transition readiness, as well as managing medications, appointment keeping, talking with providers, and managing daily activities. Daily needs adjustment was related to transition readiness overall, as well as managing medications, tracking health issues, talking with providers, and managing daily activities. Of

note, friend adjustment was only related to two aspects of transition readiness (talking with providers and managing daily activities). Additionally, college satisfaction was significantly correlated to two aspects of transition readiness (e.g., managing medications and talking with providers). Finally, workload adjustment was only correlated with managing medications.

UHC Utilization

Approximately 41% of college freshman utilized UHC services in their first year at the university. Review of differences in perceived satisfaction/adaptation and transition readiness between individuals who are and are not utilizing UHC services are presented in Table 3. Overall, students using UHC services did not differ from those who did not on any aspect of college satisfaction/perceived adaptation ($p > .05$). However, significant differences emerged for three of the five aspects of healthcare transition readiness, with those utilizing the UHC reporting higher scores for managing medications ($p \leq .001$), appointment keeping ($p = .03$), and talking with providers ($p = .02$), as well as overall transition readiness ($p = .01$).

Predicting Transition Readiness

Hierarchical linear regression analyses were conducted to determine the contribution of gender, perceived adjustment to college, and UHC utilization to the variance in transition readiness. Gender was entered on the first step, and accounted for 5% of the variance. Overall adjustment to college was entered in the second step and contributed an additional 4.7% of the variance. Finally, UHC utilization was entered in the third step and accounted for 2.4% of additional variance in transition readiness. In the final model, each of the three predictors contributed significantly to the variance, with the total model explaining 12.1% of the variance in healthcare transition readiness.

CHAPTER 4

Discussion

For EAs, the adjustment to college is laced with challenges and opportunities for growth and development in multiple areas of life. Extant literature exploring this unique developmental period has identified salient emerging areas for developing competency. In this investigation, these domains included EAs' satisfaction with college and their level of adaptation to their workload, taking care of daily needs, caring for their overall health and fitness, and making friends. While pediatric literature for EAs with a chronic illness has focused on healthcare transition readiness, less is known for factors related to transition readiness for healthy EAs. The overall findings of this study support the conclusion that greater competency in more typical spheres of healthy EA college students' daily life is related to greater competency for them in the particular arena of healthcare transition readiness. General competence seems to be fertile ground for growing competencies in particular areas. More closely akin to the arena of healthcare transition readiness, healthy freshman EAs who utilized the University Health Center also reported greater transition readiness than the non-utilizers.

As predicted, overall adjustment to college was related to overall transition readiness suggesting that management of healthcare responsibilities may be one aspect of general transition to adulthood. However, particular aspects of transition readiness were uniquely related to aspects of college transition suggesting that specific skills may be more salient for developing independence in managing healthcare needs. For example, adjusting to caring for one's daily needs was related to all aspects of transition readiness except appointment keeping suggesting

that perhaps students who assume greater responsibility of managing their needs broadly are better able to take on specific medically related tasks as well. As the population was collected from a healthy sample, it is possible that the frequency of medical appointments was low and therefore this aspect of transition readiness was not relevant in this population. Additionally, adjustment to managing health/fitness needs was related to all aspects of transition readiness except tracking health issues. Perhaps those who have prioritized their health/fitness needs have assumed begun to develop the necessary skills for managing their health from a medical perspective. Notably, adjustment to making friends was related to talking with providers, indicating that perhaps confidence in navigating new social relationships may transfer to talking with adult medical providers. Adjustment to making friends was also related to managing daily needs on the transition readiness scale, suggesting that perhaps building a social network may help support one's broader management of daily responsibilities, perhaps through peer reminders of responsibilities. Finally, workload adjustment was only related to one aspect of transition readiness (managing medications) which may reflective of the requirements of college freshman. As many college freshman are taking introductory level coursework, it is possible that students have not yet encountered significant difficulties in this area. Alternatively, it may be the case that the academic study habits learned in high school are appropriate for introductory level coursework but as workloads increase, students may be faced with greater difficulty.

The prevalence of UHCs on college campuses is significant and may act as a training ground for developing and fostering transition readiness skills. In the current sample, 41% of college freshman endorsed using the UHC for some aspect of their healthcare needs. When comparing students who used the UHC to those who did not, notable differences emerged for aspects of transition readiness but not for aspects of college adjustment suggesting that the UHC

may have a unique impact on transition readiness. Given the cross-sectional design of the current project, it is uncertain as to whether students who were higher on transition readiness had already developed the appropriate skillset to navigate the UHC system or if the process of utilizing these services improved transition readiness. It is also possible that those with an existing higher skillset is more prone to use the UHC, and that in the process of doing so their skills are further developed. Regardless, the UHC is unique area for promoting transition readiness skills for college students. At the university where this research was conducted, the UHC website is easy to navigate, thus reducing potential barriers to care through online appointment scheduling with general or specialty clinics, as well as prescription refills. Additionally, the UHC provides text, email, and/or phone reminders for appointments and refills as well as secure online portal for communicating with medical providers. This system may help bolster EAs' confidence in their ability to navigate the healthcare system while also providing significant support for some of the aspects that rely heavily on executive functioning skills (e.g., appointment reminders), which are still under-developed in this age group. It is possible that their successful use of the UHC would foster their competence and confidence in their ability to manage other aspects of their healthcare and work with other healthcare agencies and providers.

An interesting finding emerged in that females seem to be more ready to assume aspects of their healthcare compared to male counterparts. This finding was consistent with the broader healthcare transition readiness literature, which has demonstrated that females managing a chronic health condition demonstrated greater skills compared to males (Sawicki et al., 2011). While this may be related to underlying differences in maturity (Cohn, 1991), one could suggest that aspects of female healthcare necessitate greater healthcare utilization and therefore development of these skills earlier. For example, in the United States approximately 28% of

women (ages 15-44) use oral contraceptive pills (Jones, Mosher, Daniels, 2012) for both birth control and noncontraceptive purposes (e.g., acne, menstrual pain, etc.; Jones, 2011), which often require annual monitoring by medical professionals. Accordingly, whether it be a product of having greater health needs or differences in personality development (e.g., maturity; Cohn, 1991), females seem to present with greater healthcare transition readiness skills by college. Therefore, targeted intervention for these skills, regardless of disease status, may be more appropriate to introduce earlier for female patients than for males.

Models of transition readiness in pediatric chronic illness populations often include developmental maturity as a domain of interest for success (Reed-Knight et al., 2014), however it is unclear how medical professionals are assessing this or implementing this recommendation when fostering readiness. While much emphasis has been made in ensuring that patients have medical knowledge and are adherent to medical regiments, less has been explored with regard to developmental competencies. Placing more focus on one's subjective opinion of their adjustment rather than objective measurement (e.g., attending college) may help medical providers better understand the developmental competency of their patients and inform the appropriate timing for intervention. The five items administered in the present study may be clinically relevant for assessing developmental maturity. Additionally, lower scores on these domains may help identify EAs who may benefit from additional support in the transition readiness process.

The university setting, specifically the UHC, may serve as a unique environment for promoting transition readiness. As reported above, while we are unable to determine whether UHC usage promotes transition readiness or visa-versa, the training setting may be the appropriate avenue for delivering interventions to promote the assumption of healthcare responsibilities. While the UHC has been utilized for developing and implementing healthy

habit interventions (e.g., substance use and safe sex initiatives), future research may aim to explore the potential benefits or effectiveness of transition readiness interventions at the UHC. Alternatively, the assumption of responsibility does not exist in a vacuum but rather in a broader context. Perhaps through the management of other responsibilities, college students develop broad skills that are transferable within the healthcare context. Therefore, promoting skills that facilitate independence may have effects on healthcare management. However, given the unique differences that emerged for students utilizing the UHC, there is likely unique aspects of responsibility that are specific to this context that may be bolstered by general independence.

Limitations/Future directions

While the present study examines a unique aspect of transition readiness not yet studied in healthy EAs, it is not without limitations. First, participants in the present study were all enrolled in an introductory psychology course at the time of assessment. While this course is open to students from a diverse set of majors, the sample may not be representative of college freshmen overall. Second, participants are represented from a single university and therefore future research may aim to assess these domains from multiple sites for generalizability. Finally, given the cross-sectional design, limited conclusions can be made about the directionality of UHC usage, transition readiness, and college adjustment. Future research should examine the process of healthcare transition readiness over time using a healthy sample to determine ideal opportunities or time points for intervention. Additionally, it is possible that students who sought out UHC services had received a targeted intervention from their primary care providers or other agency prior to beginning college. Furthermore, research should examine pre-college transition readiness skills as well as developmental competencies in healthy youth to better understand the mechanisms of negotiating independence both broadly and with healthcare tasks specifically.

For individuals who are struggling with healthcare transition readiness, these difficulties could be targeted directly and probably most efficiently by intervening to improve those skills in particular. Healthcare transition readiness skills are finite in scope, and are largely similar across specialty and general medicine clinics. Communication with health professionals, taking medications as prescribed, making appointments, understanding insurance policies, etc. are all trainable skills for healthy children and adolescents, as well as those with chronic conditions. This training could take place in high schools, pediatric primary care offices, through telemedicine, and through UHCs. Training of this type could be adopted as standard of care for AYSs, regardless of health status. Interventions specifically to train particular transition behaviors are representative of the treatment research in this area (Campbell et al., 2016). In contrast, but not in contradiction to this approach, the results of this investigation suggest that raising adolescents to be competent across domains of life, to be effective problem solvers, and to assume responsibility for aspects of their everyday life (e.g., chores, homework, etc.) may help increase the likelihood that they will also successfully assume responsibility for the next challenge, including healthcare transition readiness. Essentially, one could suggest that by training sufficient exemplars of responsible behavior, it is likely that EAs will generalize those skills to a new situation in which training may not have been provided (Stokes & Baer, 1977). Understanding competent development throughout this unique time period may provide valuable directions for informing healthcare transition readiness interventions, regardless of the health status of the EA.

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Table 1

Summary of Correlations Between College Adjustment and Transition Readiness

Domain	1	2	3	4	5	6	7	8	9	10	11	12
1. College Satisfaction[a]	1	.37***	.23**	.26***	.60***	.71***	.19**	.09	-.01	.20**	.13	.14
2. Workload Adjustment[a]		1	.37***	.43***	.22**	.67***	.17*	-.05	-.01	.08	.11	.05
3. Daily Needs Adjustment[a]			1	.45***	.18*	.65***	.18*	.09	.19**	.21**	.26***	.21**
4. Health/Fitness Adjustment[a]				1	.20**	.70***	.22**	.18*	.10	.16*	.22**	.23***
5. Friends Adjustment[a]					1	.67***	.11	.12	-.05	.16*	.16*	.12
6. Overall Adjustment[a]						1	.25***	.14	.06	.24***	.26***	.22**
7. Managing Medications[b]							1	.54***	.49***	.45***	.38***	.77***
8. Appointment Keeping[b]								1	.61***	.42***	.44***	.88***
9. Tracking Health Issues[b]									1	.42***	.39***	.79***
10. Talking with Providers[b]										1	.55***	.63***
11. Managing Daily Activities[b]											1	.64***
12. Transition Readiness (Overall)[b]												1

Note. N=197. *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$.

[a]Perceived Adjustment Scale, [b]Transition Readiness Assessment Questionnaire.

Table 2

Perceived Adaptation and Transition Readiness of College Students Utilizing UHC Services Compared to Students Who Are Not

Domain	UHC usage Mean	SD	No UHC usage Mean	SD	Mean difference [95% CI]	*t*	Cohen's *d*
1. College Satisfaction[a]	4.17	.74	3.98	.85	.19 [-.04 to .42]	1.62	.24
2. Workload Adjustment[a]	3.60	.77	3.61	.74	-.01 [-.22 to .21]	-.06	.01
3. Daily Needs Adjustment[a]	4.02	.85	3.84	.87	.18 [-.07 to -.43]	1.44	.21
4. Health/Fitness Adjustment[a]	3.57	1.05	3.34	.92	.23 [-.05 to .51]	1.64	.23
5. Friends Adjustment[a]	3.88	.94	3.72	1.07	.16 [-.14 to .44]	1.03	.16
6. Overall Adjustment[a]	3.85	.57	3.70	.62	.15 [.02 to .32]	1.72	.25
7. Managing Medications[b]	4.12	.71	3.60	1.03	.52 [.27 to .79]	3.99***	.58
8. Appointment Keeping[b]	3.60	.70	3.34	.87	.26 [.02 to .48]	2.15*	.33
9. Tracking Health Issues[b]	3.80	.75	3.71	.95	.09 [-.16 to .34]	.72	.11
10. Talking with Providers[b]	4.79	.39	4.56	.77	.23 [.04 to .41]	2.41*	.38
11. Managing Daily Activities[b]	4.30	.70	4.26	.82	.04 [-.18 to .26]	.39	.05
12. Transition Readiness (Overall)[b]	3.97	.50	3.73	.72	.24 [.06 to .42]	2.58**	.39

Note. N=197; UHC usage *n* =81, No UHC usage *n* =116. *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$.

[a]For Cohen's *d*, small effect size: *d* = .20, medium effect size: *d* = .50, large effect size: *d* =.80

[a]Perceived Adjustment Scale, [b]Transition Readiness Assessment Questionnaire.

Table 3

Hierarchical Regression of Transition Readiness, Gender, Adjustment, and UHC Utilization

Transition Readiness (overall)	B[a]	SEB[b]	β[c]	*t*	R^2	ΔR^2	*F*
Step 1:					.050	.050	10.21**
Gender[d]	.32	.10	.22	3.20**			
Step 2:					.097	.047	10.17**
Gender	.35	.10	.24	3.54***			
Overall Adjustment	.24	.07	.22	3.19**			
Step 3:					.121	.024	5.21*
Gender	.35	.10	.24	3.54***			
Overall Adjustment	.22	.07	.20	2.92**			
UHC Utilization[e]	-.21	.09	-.16	-2.28*			

Note. N = 197. *$p \leq .05$ **$p \leq .01$ ***$p \leq .001$

[a]B = unstandardized coefficients. [b]SEB = standard error of unstandardized coefficients [c]β = standardized coefficients. [d]Gender dichotomized as 1=female, 0=male. [e]UHC Utilization dichotomized as 1=yes, 0=no.