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Young adult mental health: A prospective examination of service utilization, perceived unmet service needs, attitudes, and barriers to service use

Jennifer M. Cadigan, Ph.D.,

University of Washington, Department of Psychiatry and Behavioral Sciences, 1100 NE 45th Street, Suite 300, UW Box 354944, Seattle, WA 98105

Christine M. Lee, Ph.D., and

University of Washington, Department of Psychiatry and Behavioral Sciences, 1100 NE 45th St., Suite 300, Seattle, WA 98105

Mary E. Larimer, Ph.D.

University of Washington, Department of Psychiatry and Behavioral Sciences, 1100 NE 45th St., Suite 300, Seattle, WA 98105

Abstract

Most young adults with mental health symptoms do not receive treatment or access services. It remains important to identify barriers to service utilization to improve access to care. The current study was a prospective analysis examining predictors of a) mental health service utilization and b) perceived unmet need for mental health services. Barriers to service utilization were examined by prior depression severity status and college student status. Participants included a subsample of young adults ages 18-23 at time of recruitment who were participating in a longitudinal monthly study who completed both baseline and a fifteen month follow-up assessment (N=622, 80% of larger study). At month 15, 23% of young adults reported receiving mental health services in the past 12 months; 26% of young adults reported a perceived unmet need for mental health services at some point in the past 12 months. There were differences in demographic and mental health predictors of service utilization and perceived unmet need for services. Women, sexual minorities, those with moderate depression, those with more impairment from depression, and perceived past year poor mental health were associated with greater likelihood of receiving services. Similar demographic characteristics were associated with greater likelihood of perceiving unmet need for services. Barriers to service utilization differed by severity of depression symptoms and student status. Young adults have distinct reasons for not accessing mental health services; addressing these to improve accessibility to care remains critical.

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Compliance with Ethical Standards: Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Keywords

young adults; mental health service utilization; depression; unmet service need

Late adolescence and young adulthood is a critical time for the development and manifestation of mental health disorders as a total of 75% of all lifetime disorders present by the age of 24 (Kessler et al., 2005). Prevalence rates for the majority of mental health disorders are higher among adolescents and young adults than in any other age group, with the most common being anxiety disorders (14%) and depressive disorders (17%) (Grant et al., 2004; Kessler et al., 2005; Merikangas et al., 2010). Despite a significant body of research identifying empirically-supported, efficacious treatment for mental illness (APA, 2006) many young adults do not receive services. It has been estimated 7.6 million American young adults (22%) meet criteria for a mental health disorder each year and one-third (estimates ranging from 32% to 41%) received mental health services within the past year (Eisenberg, Golberstein, & Gollust, 2007; Eisenberg, Hunt, Speer, & Zivin 2011; SAMHSA, 2016; Wang et al., 2005).

Depression and Service Utilization

Prevalence rates of a past year Major Depressive Disorder (MDD) are highest among young adults compared to any other age cohort (APA, 2013; SAMSHA, 2016). In 2015, a total of 3.6 million American young adults (10.3% of young adults) had a Major Depressive Episode in the past year and 1.7 million (46.8%) of those individuals received mental health services for depression (SAMSHA, 2016). In a study of over 70 college campuses, less than half of all students who reported seriously considering attempting suicide in the past year received services (Drum, Brownson, Denmark, & Smith, 2009). Given that depression is associated with increased risk of suicide and significant impairment in social, occupational, and emotional functioning, service utilization is essential (Brent et al., 1993; Brown et al., 2000; SAMSHA, 2016).

Student Status and Service Utilization

There are important distinctions between young adults attending college and same-aged non-college peers with regard to mental health service utilization. Although full-time college students and same-aged non-college peers report a similar prevalence of psychiatric disorders and serious thoughts of suicide (8.0 and 8.7 percent, respectively), college students are less likely than non-college peers to attempt suicide (Blanco et al., 2008; SAMSHA, 2016). Among young adults with a past year mood disorder, 34.1% of college students and 34.8% of non-college young adults received mental health treatment (Blanco et al., 2008).

Mental Health Attitudes and Barriers to Service Utilization

Given the prevalence of mental health disorders and low endorsement of mental health service utilization, it remains critical to identify and understand attitudes and barriers to service utilization to improve access to care. In the general US adult population, reasons for not receiving services were assessed among 5.1 million adults with a past year mental illness

who perceived a need for treatment but did not receive it (SAMSHA, 2014). Over half of adults (55%) were not able to afford the cost, 26% did not know where to go for services, 25% thought they could handle the problem without treatment, 11% thought treatment would not help, 11% had a fear of being committed or having to take medicine, 10% reported their health insurance did not cover enough treatment, and 9% thought receiving services may have a negative effect on their job (SAMSHA, 2014). Other frequently endorsed barriers to mental health service utilization among young adults include perceived stigma, fear of negative effect on career and academic record, not recognizing symptoms, and general lack of knowledge about mental health services (Eisenberg, Hunt, & Speer, 2012; Gulliver, Griffiths, & Christensen, 2010). Many college students do not receive services because they do not perceive a need and prefer to handle their problems on their own (Eisenberg, Hunt, Speer, & Zivin, 2011).

Although rates of mental health service utilization are similar between college and non-college age young adults (Blanco et al., 2008), less is known about how barriers to service utilization differ between these groups. Differences in access to resources (i.e., many college students have access to a centralized student health service building which could deliver interventions for free or reduced cost) may contribute to differences in service utilization (Blanco et al., 2008). Understanding barriers to accessing services among subgroups of young adults will help clinicians and researchers identify targeted approaches to address young adult service needs.

Demographic variables are known to be associated with greater likelihood of service utilization. Rates of mental health service utilization have been found to be higher for women, sexual minorities, individuals 21 or older, and those with lower religiosity (Burgess, Lee, Tran, & van Ryn, 2007; Dunbar et al., 2017; Pottick et al., 2008). We examined these variables in models predicting service utilization and perceived unmet service need.

Current Study

Although a significant body of research has examined college student mental health and barriers to service utilization among 4-year college students (e.g., Eisenberg et al., 2011; Zivin, Eisenberg, Gollust, & Golberstein, 2009), with some attention on 2-year community college students (e.g., Katz & Davison, 2014), little attention has been placed on examining community samples of young adults. Further, less is known regarding how barriers to service utilization differ among those with and without depression symptoms and among college students (both community college and 4-year students) and same-aged non-college peers. Therefore, the current study examines mental health service utilization and barriers to service utilization among 622 young adults (ages 18-23 at recruitment) who completed a baseline assessment and a follow-up assessment 15 months later. We examined baseline demographic characteristics and mental health symptoms to prospectively identify predictors of mental health service utilization and barriers to service utilization over a year later. The following research questions were examined: (1) What demographic characteristics and baseline mental health symptoms predict: a) receiving mental health services (service utilization) assessed 15 months later and b) perceiving a need for mental health services but not receiving it (i.e., perceived unmet service need) assessed 15 months later, (2) How do

service utilization and attitudes about service utilization differ by depression symptom status, and (3) Among young adults who report a perceived unmet service need, how do barriers differ between: a) those with baseline depression and those without and b) college students and same-aged non-students? We hypothesized mental health symptoms would predict perceived unmet service need and specific demographic variables (i.e., women, sexual minority, age 21 or older) would predict receiving services. We also hypothesized barriers of perceived need and cost of mental health care would differ by depression subgroup and student subgroup.

Method

Participants and Procedures

Participants were 622 young adults (ages 18-23 at recruitment) who were participating in a longitudinal monthly study of young adult transitions and alcohol use and completed a 15 month assessment. Young adults were recruited from a large metropolitan area in the Pacific Northwest United States. Recruitment methods included online, social media, and print advertisements, and community outreach. Those interested were asked to contact the study and complete a brief screening survey to determine eligibility. Eligibility criteria included being 18-23 years old at recruitment, residing within 60 miles of the research site, having a valid email address, drinking alcohol at least once in the last year, and being willing to come to the study office for an initial appointment. At the appointment, age was verified by driver's license or photo ID, and informed consent was obtained from all participants in the study. All procedures were approved by the University Institutional Review Board, a federal Certificate of Confidentiality was obtained, and no adverse consequences were reported.

In total, 779 young adults met eligibility criteria, came to the study offices and completed the baseline survey. The longitudinal commitment for the larger project included completing 24 consecutive months of online surveys plus a final survey at 30 months. Data for the present analyses include measures from the baseline assessment and month 15 assessment. Participants received \$20 in Amazon gift cards for completed surveys in Year 1, \$25 in Year 2 and a \$20 bonus if they completed all monthly surveys in a six month period.

Of the subset of participants who completed both baseline and month 15 assessments (n=622, 79.8% of the total sample), the majority were women (59.5%), Caucasian (58.9%), and heterosexual (80.8%), 19.8% were Asian or South Asian, 4.7% were Black or African American, 1.3% Arab, Middle Eastern, or Northern African, 0.5% American Indian or Alaskan Native, and 0.6% Native Hawaiian or other Pacific Islander. A total of 11.5% reported more than one race and 7.8% across races were Hispanic/Latino/a ethnicity.

Using this subset of participants (n=622), at baseline most of the participants were students (74.1%). Among the students, 1.9% were high school students, 0.3% were working toward a General Education Development (GED), 1.1% were trade or vocational school students, 18.3% were 2-year community college students, 47.2% were 4-year college or university students, and 5.3% were graduate or professional school students. Approximately one-fourth of the sample were not currently students (25.8%). A total of 39.6% of participants were not working, 44.3% were working part-time, and 16.2% were working fulltime. Over half of all

participants were age 21 or older (54.4%) and the average age of the sample was 20.68 years old (SD = 1.726). A third of participants (33.4%) reported they had no current influential religious beliefs. A total of 7.4% of participants reported they had been homeless at some point in their lives. When asked about their current health insurance, 71.1% were covered on their parent's plan, 12.4% were on Medicaid, 9.8% were covered at work or school, 3.4% did not currently have insurance, 2.6% reported other, and 0.8% stated they pay out of pocket.

Measures

Demographic characteristics, substance use, and mental health symptoms were assessed at baseline. Mental health services, attitudes, and barriers were assessed at month 15.

Demographic characteristics included: biological sex (0=male; 1=female), age (0=less than 21; 1=21 or older), sexual orientation (0=heterosexual; 1=sexual minority), ever been homeless (0=never homeless; 1=ever homeless), religious beliefs (0=no current influential religious beliefs; 1=currently have influential religious beliefs), student status (0= not a student; 1=student), and employment status (0=not employed; 1=employed part-time or full-time).

Substance Use—*Alcohol use* was assessed with the Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001), a 10-item self-report measure used to assess hazardous alcohol consumption and alcohol dependence. Some response options in the current study (i.e., “2 to 3 times per week”, “4 or more times were week”) were worded slightly differently than in the original AUDIT (i.e., “weekly”, “daily or almost daily”). *Alcohol-related problems* were assessed with The Brief Young Adult Alcohol Consequences Questionnaire (BYAACQ; Kahler, Strong, & Read, 2005). The BYAACQ consists of 24 dichotomous items used to assess alcohol-related problems during the past month. The internal consistency estimate for the measure was .86. *Marijuana use* was assessed with the Cannabis Use Disorder Identification Test (CUDIT-R; Adamson et al., 2010), an 8-item self-report measure to identify individuals with harmful cannabis use. *Substance use treatment* was assessed with the item “Have you ever received treatment or counseling for your use of alcohol or any drug use as a client or patient?” (0=no; 1=yes).

Mental Health—*Depressive symptoms* were assessed using the Patient Health Questionnaire (PHQ-9; Spitzer, Kroenke, & Williams, 1999). The PHQ-9 is a widely used self-report measure for assessing depression symptoms (Kroenke, Spitzer, & Williams, 2001). Participants are presented with 9 symptoms of depression and instructed to indicate “Over the last month, how often have you been bothered by any of the following problems?” on a scale from “0-Not at all”, “1-Several days”, “2-More than half the days”, to “3-Nearly every day”. Total scores range from 0-27. PHQ-9 scores of 10 or greater are recommended as a cutpoint for Major Depression, with a sensitivity of 88% and specificity of 88% (Kroenke & Spitzer, 2002). Consistent with the guidelines of the recommended clinical cutpoint, individuals were coded as having “no depression symptoms at baseline” if their total PHQ-9 score was less than 10 and coded as having “depression symptoms at baseline” if their total PHQ-9 score was 10 or greater. Additionally, scores of 5, 10, 15, and 20 were used as the cutpoints for mild, moderate, moderately severe and severe depression,

respectively (Kroenke, Spitzer, & Williams, 2001). The internal consistency estimate for the measure was .88. Item-9 was used to assess suicidality. *Anxiety symptoms* were assessed using a modified version of the Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006). The GAD-7 has shown excellent sensitivity (89%) and specificity (82%) in detecting Generalized Anxiety Disorder. Participants are presented with various problems and indicate “Over the last month, how often have you been bothered by any of the following problems?” on a scale from “Not at all”, “Several days”, “More than half the days”, to “Nearly every day”. In the current study, five items from the GAD-7 were used as an indicator of anxiety ($\alpha = .85$): “Feeling nervous, anxious, or on edge”, “Worrying too much about different things”, “Trouble relaxing”, “Being so restless that it is hard to sit still”, and “Becoming easily annoyed or irritable”. *Perceived stress* was assessed using the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983), a 14-item self-report measure where participants indicate how often in the past month they felt various levels of stress ($\alpha = .85$).

General mental health was assessed with the items “In general, how would you say your mental health was in the past 12 months?” and “In general, how would you say your mental health was in the previous month?” [response options ranged from: Excellent (1) to Poor (5)] which were adapted from the Centers for Disease Control and Prevention (CDC, 2013).

Mental health service utilization was assessed with the item “During the past 12 months, have you received counseling or outpatient treatment for any problem you were having with your emotions, nerves, or mental health? Please do not include counseling for alcohol or drug use” (0=no; 1=yes) (SAMSHA, 2014).

Perceived unmet need for mental health service was assessed with the item “During the past 12 months was there any time when you needed mental health treatment or counseling for yourself but did not get it?” (0=no; 1=yes).

Attitudes toward service utilization was assessed with the items “If you had a serious emotional problem, how likely would you go for professional help?” [response options ranged from: Definitely Go (1) to Definitely Not Go (4)], “How comfortable would you feel talking about personal problems with a professional?” [response options ranged from: Very Comfortable (1) to Not At All Comfortable (4)], “How embarrassed would you be if your friends knew you were getting professional help for an emotional problem?” [response options ranged from: Very Embarrassed (1) to Not At All Embarrassed (4)], (Gonzalez, Alegria, & Prihoda, 2005).

Barriers to service utilization: Individuals who responded “yes” to perceived unmet need for mental health services were then asked “Which of these statements explain why you did not get the mental health treatment or counseling you needed?” and asked to check all that apply from a list of 15 items (see Table 3 for list, SAMSHA, 2014).

Analytic Procedure

First, logistic regression was used to examine baseline predictors of receiving mental health services in the past 12 months and predictors of perceived unmet need for services in the past 12 months (as measured in Month 15). A stepwise model was used with demographic

variables on step 1, substance use variables on step 2, and mental health variables on step 3. In the final step (step 3), all significant predictors were also significant in all previous steps, therefore for the sake of parsimony, only the final step is shown. Second, chi-square tests, t-tests, and nonparametric Mann-Whitney U tests were used to assess differences in mental health attitudes and service utilization by baseline depression symptom status. Third, among those who reported a perceived unmet need for mental health services, chi-square tests were used to examine barriers to service utilization as a function of baseline depression symptom status and school status.

Results

Descriptive Information

At baseline, the average AUDIT score was 6.26 (SD=4.87; range: 0-28), average BYAACQ score was 3.23 (SD=3.76; range: 0-21), and average CUDIT-R score was 4.33 (SD=5.42; range: 0-29). A total of 28.1% (n=174) screened positive for depression symptoms. The average depression score on the PHQ-9 was 7.26 (SD =5.33; range: 0-27), average anxiety scores was 4.80 (SD =3.52; range: 0-15), and the average perceived stress score was 22.32 (SD = 9.03; range: 0-56).

Predictors of Mental Health Service Utilization

At month 15, a total of 22.7% (n=141) of young adults reported they had received mental health services in the past 12 months. Sex and sexual orientation status were significantly associated with the likelihood of receiving mental health services at month 15 (Table 1), such that women and sexual minorities had greater odds of receiving services. Depression severity status was associated with the likelihood of receiving services, such that individuals with moderate depression (i.e., PHQ-9 scores of 10-14) had greater odds of receiving services. Depression impairment was associated with the likelihood of receiving services, as those with “very difficult” impairment had greater odds of receiving services. Individuals with a perceived past year mental health as “fair” or “poor” had a significantly greater likelihood of receiving services. No other significant associations were found.

Predictors of Perceived Unmet Need for Mental Health Services

At month 15, a total of 26.1% (n=161) of young adults identified a perceived unmet need for mental health services at some point in the past 12 months. Sex and sexual orientation status were significantly associated with the likelihood of perceiving a need for mental health services at month 15 but not receiving it (Table 1), such that women and sexual minorities had greater odds of endorsing an unmet need. Young adults who perceived their past year mental health as “fair”, or “poor” had a significantly greater likelihood of endorsing a perceived need for services but not receiving it. No other significant associations were found.

Mental Health Attitudes and Service Utilization by Depression Symptoms

Differences in mental health attitudes and service utilization by baseline depression symptom status are shown in Table 2. Young adults with baseline depression symptoms perceived their past year and past month mental health as significantly worse than

individuals without depression symptoms. There were no differences in the likelihood of going to a professional for help, feeling comfortable talking about problems with a professional, or feeling embarrassed if friends knew they were getting professional help for an emotional problem between young adults with depression symptoms and those without. Young adults with depression symptoms were more likely to receive services, and also to report a perceived unmet need for mental health services, compared to those who were not depressed.

Barriers to Service Utilization

At month 15, young adults who reported a perceived unmet need for mental health services in the past 12 months (n=161), were asked to select all reasons why they did not get the mental health services they needed (Table 3). The most common responses were: thought could handle the problem without treatment (60.6%), did not have time because of job, childcare, or other commitments (51.3%), could not afford the cost (39.4%), did not think treatment would help (36.3%), and did not know where to go to get services (33.1%).

Barriers as a Function of Depression Symptoms—Young adults with depression symptoms were more likely to not receive services due to concerns that treatment or counseling might have a negative effect on their job, concerns they might be committed to a psychiatric hospital or might have to take medicine, and logistical issues (i.e., lack of transportation, not convenient hours, did not know where to go to get services) than non-depressed individuals.

Barriers as a Function of Student Status—Young adults who were not students were more likely to report not receiving services because they could not afford the cost or because health insurance does not pay enough for mental health treatment. Students were more likely to report not receiving services because they did not think they needed treatment.

Discussion

Young adulthood is a developmental stage characterized by transitions in social roles, living situations, work status, relationships, and identity (Arnett, 2004; Schulenberg & Maggs, 2002) and is an acute time for the development of mental health disorders (Kessler et al., 2005). The current study found certain demographic characteristics and mental health symptoms assessed at baseline predicted mental health service utilization, in addition to predicting perceived unmet need for mental health services, over a year later. The study also extends research on attitudes of service utilization and barriers by examining differences among subgroups (i.e., college status; depression status) to further understand their unique needs.

Mental Health Service Utilization

In the general U.S. population of adults aged 18 and older, 14.6% receive mental health services in the past year (SAMSHA, 2016). In our sample of young adults, 22.7% reported receiving mental health services in the past year. Consistent with previous research examining predictors of service utilization among college students (Eisenberg et al., 2007;

Eisenberg et al., 2011; Zivin et al., 2009), we found females and sexual minorities to be more likely to receive services as assessed nearly fifteen months later. Individuals reporting their past year mental health (assessed at 15 month follow-up) was “fair” or “poor” were also more likely to have received services. Notably, we also found those with moderate depression (i.e., PHQ-9 scores between 10-14) and with “very difficult” impairment were more likely to receive services. This suggests young adults with some impairment (e.g., experiencing some depression symptoms impacting daily functioning) may be more motivated to utilize services than those with higher levels of impairment and risk for self-harm (e.g., severe, impairing, depression symptoms).

Rates of depressive symptoms were higher in the current study than among other young adults and college student samples. We found 28% of young adults screened positive for depression symptoms (i.e., PHQ-9 scores ≥ 10), while other student samples have found 15% screened positive for depression symptoms (Eisenberg et al, 2007). Our finding that 49.3% of individuals with depression symptoms received services was similar to a finding that 45% of college students with MDD received services in the past year (Eisenberg et al., 2007).

Perceived Unmet Need For Mental Health Services

There is a substantial unmet need for mental health services among young adults, a vulnerable group for developing mental health disorders. For those with perceived past year mental health as “fair” or “poor”, the odds were 20 and 24 times higher, respectively, that they reported needing services but not receiving them compared to those with “excellent” past year mental health. This highlights that those with mental health difficulties were more likely to report an unmet service need. These findings are similar to cross-sectional analyses showing students with mental health problems report a need for services with many not receiving them (Eisenberg, Golberstein, & Gollust, 2007; Eisenberg, Hunt, Speer, & Zivin, 2011). Being female and identifying as a sexual minority were the only demographic factors to predict both 1) receiving mental health services and 2) perceived unmet need for services. Similarly, rates of service utilization are higher for women and sexual minorities (Burgess, Lee, Tran, & van Ryn, 2007; Dunbar et al., 2017; Pottick et al., 2008). Consistent with our findings, sexual minority college students have been shown to report higher rates of psychological distress and are more likely to use mental health services than heterosexual students (Dunbar et al., 2017). Therefore, it is possible both women and sexual minority young adults are more likely to report an unmet need for services due to greater distress and are more likely to access services.

Barriers to Service Utilization

The most frequently endorsed barrier to mental health service utilization was believing one could handle the problem without treatment. This barrier, often referred to in the literature as “self-reliance”, has been frequently cited among young adults as a reason for not pursuing treatment (Gulliver et al., 2010). If young adults are steadfast about not accessing services, we recommend they have access to evidence-based self-help material (e.g., treatment workbooks, mobile apps, web-based resources). It is also important they be informed of accurate norms that they are not alone (e.g., in our study 1 in 4 students had depression symptoms) and that most young adults who do not believe they need services actually have

elevated clinical symptoms and may benefit from brief interventions (Geisner, Neighbors, & Larimer, 2006).

Compared to non-depressed young adults, depressed young adults were more likely to report not receiving services due to logistical concerns (e.g., not knowing where to get treatment or how to get there) and concerns that treatment would negatively affect their job. Our findings show there were no differences in employment rates between depressed young adults and non-depressed young adults, suggesting that the implications of mental health services negatively impacting work is more salient for depressed individuals. This is consistent with findings from nationally representative data that 26% of US adults with service needs do not know where to go for services and 9% are concerned about treatment impacting their job (SAMSHA, 2016).

Interventions aimed at increasing service utilization remain essential. Greater problem recognition has been associated with service utilization and students with active coping skills (i.e., knowing where to go for help; seeking alternative solutions to problems) are likely to use mental health services (Leaf and et al., 1985; Sontag-Padilla et al., 2016). Therefore, clinicians and researchers could develop interventions targeting problem recognition skills (we found 26% of young adults with depression symptoms reported they did not think they needed treatment) and enhancing active coping and problem solving skills (we found 42% of young adults with depression symptoms did not know where to go to services and 26% had other logistical issues preventing them from accessing services) to improve service utilization.

Barriers to service utilization also differ between college students and non-college same aged peers. Increasing problem recognition could also be helpful for college students as they were more likely to report they did not need services. Many students have access to on-campus mental health resources for free or reduced cost which may minimize barriers related to cost and transportation (i.e., Blanco et al., 2008; Eisenberg, Golberstein, & Gollust, 2007). Some colleges have also adopted stigma-reducing campaigns on campuses (Hunt & Eisenberg, 2010). Future research could examine where college students access mental health services (i.e., on- or off-campus) to further understand how students utilize services.

For all young adults, a model of screening, brief intervention, and referral to treatment (SBIRT) could be especially helpful in identifying those at risk (i.e., based on PHQ-9, GAD-7, substance use), followed by a warm handoff with a mental health service provider. Integrating mental health screening and providing some level of intervention based on an individual's risk could enhance service utilization and increase dissemination of empirically-supported treatment. Compared to students, non-college young adults were more likely to report not receiving services due to cost/insurance. Providing a cost-effective screening and brief intervention option for non-college students, who have monetary concerns, is especially important.

Although there were no differences in attitudes about receiving services for young adults with and without depression, nearly 40% of both groups reported they would “probably not

go” or “definitely not go” for professional help if they had a serious emotional problem. Further, 13% of the sample reported a barrier to service utilization was stigma concerns that mental health treatment might cause friends or family to have a negative opinion of them. It is possible these individuals are endorsing public stigma and not necessarily self-stigma, which is related to internalizing perceived negative beliefs about mental health which can lead to reduced self-worth, feelings of shame, and consequently less intention to seek mental health services (Sharp et al., 2015; Vogel & Wade, 2006). We encourage researchers to develop novel approaches to increase problem recognition, willingness to seek treatment, and reduce perceived self-stigma.

Limitations and Summary

Results and interpretations should be considered in light of several limitations. Although self-report measures used to assess mental health symptoms have strong psychometric properties and are frequently used, scores from the measures are not diagnostic. We did not assess the type of services received nor psychiatric medications. It is important to recognize ethnic and cultural values may impact what behavior or symptoms individuals view as problematic, affecting their decision to pursue services (Cauce et al., 2002). Cultural factors related to mental health utilization were not assessed. The sample was recruited from a single metropolitan area and included young adults who reported drinking at least once in the prior year, thus results may not generalize to other populations. Despite these limitations, the current study identified predictors of, and barriers to, mental health service utilization and perceived unmet need among emerging adults using a longitudinal dataset of diverse 18 to 23 year olds. We encourage future research to continue to address barriers to service utilization and improve access to care for those in need.

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Table 1
Baseline Predictors of Perceived Unmet Need For Mental Health Services and Service Utilization at Month 15

Baseline Predictors	Perceived Unmet Need for Mental Health Services		Received Mental Health Services	
	Odds ratio (95% CI)	<i>p</i> -value	Odds ratio (95% CI)	<i>p</i> -value
Female (vs. male)	3.662 (2.058, 6.517)	<.001	1.988 (1.147, 3.447)	.014
21 or Older (vs. less than 21)	1.162 (.701, 1.926)	.560	1.462 (.878, 2.435)	.144
Ever Homeless (vs. never homeless)	2.242 (.862, 5.828)	.098	.742 (.270, 2.037)	.562
Sexual Minority (vs. heterosexual)	1.162 (1.031, 3.080)	.039	1.735 (1.005, 2.993)	.048
Religious Beliefs (vs. not at all)	.862 (.521, 1.425)	.562	1.140 (.687, 1.915)	.621
Not Student (vs. student)	1.305 (.755, 2.256)	.340	.846 (.476, 1.505)	.570
Employed (vs. not employed)	1.551 (.931, 2.583)	.092	.770 (.467, 1.269)	.306
Substance Use Treatment	.747 (.188, 2.971)	.679	.773 (.164, 3.641)	.773
AUDIT Score	.996 (.924, 1.073)	.911	.976 (.902, 1.055)	.540
Alcohol Problems	1.045 (.958, 1.141)	.322	.967 (.883, 1.059)	.463
CUDIT Score	1.004 (.957, 1.054)	.862	.961 (.915, 1.010)	.117
Stress	1.016 (.971, 1.064)	.483	.956 (.912, 1.002)	.061
Anxiety	0.970 (.877, 1.072)	.552	1.070 (.973, 1.177)	.162
Depression				
None to minimal	1.00	-	1.00	-
Mild	1.205 (.624, 2.329)	.578	1.507 (.760, 2.987)	.241
Moderate	1.387 (.594, 3.239)	.450	2.610 (1.115, 6.110)	.027
Moderately severe	1.237 (.331, 4.618)	.752	1.678 (.452, 6.233)	.439
Severe	1.900 (.337, 10.711)	.476	2.297 (.424, 12.433)	.335
Thoughts of Suicide (vs. not at all)	1.412 (.733, 2.722)	.303	.548 (.273, 1.101)	.091
Depression Impairment				
Not difficult at all	1.00	-	1.00	-
Somewhat difficult	.982 (.540, 1.788)	.954	1.570 (.844, 2.920)	.115
Very difficult	1.099 (.399, 3.028)	.856	5.395 (1.971, 14.767)	.001
Extremely difficult	2.212 (.504, 9.702)	.293	1.852 (.454, 7.561)	.391
Perceived Past Year Mental Health (Month 15).				
Excellent	1.00	-	1.00	-
Very Good	2.245 (.602, 8.38)	.229	1.774 (.555, 5.665)	.333
Good	5.135 (1.402, 18.813)	.014	2.815 (.883, 8.969)	.080
Fair	20.599 (5.611, 75.615)	<.001	10.480 (3.250, 33.791)	<.001
Poor	24.517 (5.416, 100.980)	<.001	17.966 (4.501, 71.714)	<.001

Note. $N=561$; Perceived Unmet Need for Mental Health Services = ($n=161$; 26.1%) Assessed at Month 15, individuals endorsing “yes” to the item “During the past 12 months was there any time when you needed mental health treatment or counseling for yourself but did not get it” were categorized as perceived unmet service need; Received Mental Health Services = ($n=141$; 22.7%) Assessed at Month 15, individuals endorsing “yes” to the item “During the past 12 months, have you received counseling or outpatient treatment for any problem you were having with your emotions, nerves, or mental health? Please do not include counseling for alcohol or drug use” were categorized as receiving mental health services. All other variables, with the exception of perceived past year mental health, were assessed at baseline. Substance Use Treatment = “Have you ever received treatment or counseling for your use of alcohol or any drug use as a client or patient?”, 0 = no, 1 = yes; AUDIT = sum score on Alcohol Use Disorders Identification Test; Alcohol Problems = sum on Brief Young Adult Alcohol Consequences Questionnaire; CUDIT = sum score on

Cannabis Use Disorder Identification Test; Stress = sum on Perceived Stress Scale; Anxiety = sum of 5-items on the Generalized Anxiety Disorder-7 scale; Depression = sum on the PHQ-9; Thoughts of Suicide = created by dichotomously scoring the PHQ-9 item 9 that asks if individuals have had “Thoughts that you would be better off dead, or of hurting yourself” 0 = not at all and 1 = any thoughts of suicide; Depression Impairment = PHQ-9 item 10 “How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?”; Perceived past year mental health = “In general, how would you say your mental health was in the past 12 months?”

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Table 2
Mental Health Attitudes and Service Utilization at Month 15 by Baseline Depressive Symptoms

	No Depression (PHQ-9 10) (71.8%)	Depression (PHQ-9 10) (28.1%)	<i>p</i> -value
	Mean (SD) or % endorsing	Mean (SD) or % endorsing	
In general, how would you say your mental health was the past 12 months?			
(1) Excellent	17.1%	4.0%	
(2) Very Good	37.5%	17.3%	
(3) Good	27.4%	30.6%	
(4) Fair	16.0%	30.1%	
(5) Poor	2.0%	17.9%	
<i>Mean Rank</i>	2.48 (1.017)	3.40 (1.094)	U=21340.50, <i>p</i> < .001
In general, how would you say your mental health was in the past month?			
(1) Excellent	23.1%	6.4%	
(2) Very Good	31.7%	24.4%	
(3) Good	29.0%	28.5%	
(4) Fair	11.9%	26.7%	
(5) Poor	4.3%	14.0%	
<i>Mean Rank</i>	2.42 (1.097)	3.17 (1.141)	U=24741.00, <i>p</i> < .001
If you had serious emotional problem, how likely would you go for professional help?			
(1) Definitely Go	22.2%	24.1%	
(2) Probably Go	36.0%	36.2%	
(3) Probably Not Go	35.1%	28.2%	
(4) Definitely Not Go	6.7%	11.5%	
<i>Mean Rank</i>	2.26 (.881)	2.27 (.957)	U=38469.00, <i>p</i> = .897
How comfortable would you feel talking about personal problems with a professional?			
(1) Very Comfortable	31.5%	29.3%	
(2) Somewhat	42.2%	41.0%	
(3) Not Very	20.4%	17.3%	
(4) Not At All Comfortable	5.6%	12.1%	
<i>Mean Rank</i>	2.00 (.864)	2.12 (.972)	U=36361.50, <i>p</i> = .275
How embarrassed would you be if your friends knew you were getting professional help for an emotional problem?			
(1) Very Embarrassed	5.6%	9.8%	
(2) Somewhat	29.9%	27.0%	
(3) Not Very	32.1%	27.6%	
(4) Not At All Embarrassed	32.4%	35.6%	
<i>Mean Rank</i>	2.91 (.917)	2.89 (1.006)	U=38655.00, <i>p</i> = .975
Perceived Unmet Need for Mental Health Services	19.3% (n=86)	42.5% (n=74)	$\chi^2(1, N=618) = 34.945, p < .001$
Received Mental Health Services	16.0% (n=71)	39.7% (n=69)	$\chi^2(1, N=619) = 40.146, p < .001$
Number of Sessions	9.35 (13.875)	15.51 (25.805)	<i>t</i> (136)=-1.759, <i>p</i> =.081

Note. $N=620$; Baseline Depression Status=Individuals with a PHQ-9 total score of <10 were coded as “no depression”; those with a PHQ-9 total score >10 were coded as “depression”; Perceived Unmet Need for Mental Health Services = “During the past 12 months was there any time when you needed mental health treatment or counseling for yourself but did not get it”; Received Mental Health Services = “During the past 12 months, have you received counseling or outpatient treatment for any problem you were having with your emotions, nerves, or mental health? Please do not include counseling for alcohol or drug use”; Among those reported receiving mental health services ($n=140$), 50.7% ($n=71$) reported no depression symptoms at baseline, 49.3% reported depression symptoms at baseline. Among those reported a perceived unmet service need ($n=160$), 53.7% ($n=86$) reported no depression symptoms at baseline, 46.3% ($n=74$) reported depression symptoms at baseline.

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Table 3
Barriers to Mental Health Service Utilization by Baseline Depression Status and Baseline Student Status Among Young Adults

Which of these statements explain why you did not get the mental health treatment or counseling you needed. Please check all that apply.	Whole Sample (n=160)		Baseline Depression Status		Baseline Student Status		Chi-square results
	No Depression (n=86)	Depression (n=74)	Not a Student (n=47)	Student (n=111)	Chi-square results	Chi-square results	
Health Insurance							
Could not afford the cost.	63 (39.4%)	31 (43.2%)	25 (53.2%)	37 (33.3%)	$\chi^2(1, N=158)= 5.461, p=019$		
Do not have health insurance	17 (10.6%)	11 (14.9%)	7 (14.9%)	9 (8.1%)	$p=.196$		
Health insurance does not cover any mental health treatment or counseling.	10 (6.3%)	5 (6.8%)	3 (6.4%)	7 (6.3%)	$p=.986$		
Health insurance does not pay enough for mental health treatment or counseling.	36 (22.5%)	19 (25.7%)	15 (31.9%)	20 (18.0%)	$\chi^2(1, N=158)= 3.698, p=054$		
Stigma/Job Concerns							
Concern that getting mental health treatment or counseling might cause your friends or family to have a negative opinion of you.	21 (13.1%)	9 (12.2%)	6 (12.8%)	15 (13.5%)	$p=.899$		
Concern that getting mental health treatment or counseling might have a negative effect on your job.	13 (8.1%)	10 (13.5%)	5 (10.6%)	8 (7.2%)	$\chi^2(1, N=160)= .5355, p=.039$		$p=.473$
Concern that you might be committed to a psychiatric hospital or might have to take medicine.	23 (14.4%)	15 (20.3%)	10 (21.3%)	12 (10.8%)	$\chi^2(1, N=160)= 3.887, p=.049$		$p=.082$
Privacy Concerns							
Privacy concerns (e.g., your information might not be kept confidential).	23 (14.4%)	11 (14.9%)	8 (17.0%)	15 (13.5%)	$p=.870$		$p=.568$
Did not want others to find out that you needed treatment.	25 (15.6%)	12 (16.2%)	6 (12.8%)	17 (15.3%)	$p=.848$		$p=.678$
Logistical Issues							
Did not know where to go to get services.	53 (33.1%)	31 (41.9%)	13 (27.7%)	40 (36.0%)	$\chi^2(1, N=160)= 4.777, p=.043$		$p=.308$
Did not have time because of job, childcare, or other commitments	82 (51.3%)	40 (54.1%)	25 (53.2%)	56 (50.5%)	$p=.530$		$p=.753$

Which of these statements explain why you did not get the mental health treatment or counseling you needed. Please check all that apply.	Whole Sample (n=160)		Baseline Depression Status		Baseline Student Status	
	No Depression (n=86)	Depression (n=74)	Chi-square results	Not a Student (n=47)	Student (n=111)	Chi-square results
Did not have transportation, or treatment was too far away, or the hours were not convenient.	11 (12.8%)	19 (25.7%)	$\chi^2(1, N=160)= 4.335, p=0.037$	11 (23.4%)	19 (17.1%)	$p=.357$
Didn't Think Need Help	23 (26.7%)	19 (25.7%)	$p=.878$	6 (12.8%)	35 (31.5%)	$\chi^2(1, N=158)= 6.051, p=.014$
Did not think you needed treatment at the time.	51 (59.3%)	46 (62.2%)	$p=.418$	26 (55.3%)	70 (63.1%)	$p=.362$
Thought you could handle the problem without treatment.	33 (38.4%)	25 (33.8%)	$p=.331$	12 (25.5%)	44 (39.6%)	$p=.090$
Did not think treatment would help.						

Note. N=160. Baseline Depression Status=Individuals with a PHQ-9 total score of <10 were coded as "no depression"; those with a PHQ-9 total score 10 were coded as "depression". Baseline Student = high school students, working toward a General Education Development (GED), trade or vocational school students, community college students, 4 year college or university students, and graduate or professional school students.