

Age differences in satisfaction with and perceived benefit from mental health services: results from the collaborative psychiatric epidemiology surveys

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Objective: This study examined variation by age in satisfaction with and perceived benefit from mental health services (MHS).

Methods: Drawn from the nationally representative Collaborative Psychiatric Epidemiology Surveys (2001–2003), the current sample included 1286 adults from age 18 to 87 years who had at least one DSM-IV diagnosis and had used MHS during the past year. Multiple linear regression analyses were used to predict satisfaction with and perceived benefit from past year MHS use. Independent variables were sociodemographic factors and objective and perceived needs.

Results: Results from multiple linear regression analyses showed that older age was positively associated with both MHS satisfaction ($p < 0.05$, $\beta = 0.105$) and perceived amount of benefit ($p < 0.05$, $\beta = 0.106$), as was better self-rated mental health ($p < 0.001$, $\beta = 0.186$; $p < 0.001$, $\beta = 0.177$). A greater number of comorbid psychiatric diagnoses was negatively associated with satisfaction ($p < 0.05$, $\beta = -0.089$). Marital status was found to be a moderator of the effect of age: for married respondents, age had a significant effect on both outcome variables ($p < 0.05$, $\beta = 0.102$; $p < 0.05$, $\beta = 0.105$), but for unmarried respondents, it did not.

Conclusions: Our findings show clear evidence of age differences in satisfaction with and perceived benefit from MHS. The findings provide important implications for future interventions targeted to improve MHS satisfaction. Age-specific strategies should be developed to prevent delay in mental health treatment. Copyright © 2012 John Wiley & Sons, Ltd.

Key words: mental health services; satisfaction; age differences

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Introduction

It is estimated that 25% of US adults currently suffer from a mental disorder, and about half of all adults experience mental illness in their lifetime (Center for Disease Control and Prevention, 2011). In 2010 alone, the global economic burden of mental illness was approximated at \$2.5 trillion (Bloom *et al.*, 2011). Older adults are a particularly vulnerable population when it comes to psychological illnesses, especially regarding their underutilization of mental health services (MHS). Achieving greater MHS use by this population could help

reduce the burden of mental illness on both its sufferers and society as a whole. Some recent research aimed at reducing underutilization has turned to MHS consumers' satisfaction with their experiences or the amount of benefit they received from the services (Forbes, 2001; Chen *et al.*, 2006; Saur *et al.*, 2007; Lippens and Mackenzie, 2011). This study examined differences in older and younger adults' experiences with MHS to help us better understand older adults' mental healthcare needs and make suggestions for improving their utilization rates.

Previous studies found age differences in the prevalence of mental disorders, consistently reporting lower

prevalence among older adults compared with their younger counterparts (e.g., Trollor *et al.*, 2007; Gum *et al.*, 2009). However, given that the number of older adults will increase over the next two decades (Day, 1996; Belanger *et al.*, 2005), it is predicted that rates of mental disorders among older adults will increase faster than those among younger adults (Jeste *et al.*, 1999). A study conducted by Martens *et al.* (2007) found relatively high rates of mental disorders in its sample: about 20% for men and 29% for women, aged 55 years and older. The same study found that prevalence increased with age among older adults. The higher rates of mental disorder in this study, compared with those in previous studies, may be due to its different sampling location (Canada, as opposed to the USA); however, older adults' mental health should still be of primary concern to researchers and clinicians, as older adults may be at increased risk for certain types of mental illness, such as depression (Crabb and Hunsley, 2006). Furthermore, even after the lower prevalence rate of mental disorders among older adults has been accounted for, they remain a particularly vulnerable population because they are less likely to use MHS than younger adults (Karlin *et al.*, 2008; Mackenzie *et al.*, 2010; Pettigrew *et al.*, 2010). Karlin and Norris (2006) reported that MHS utilization among older adults decreases with age, which is particularly troubling in light of the increasing mental disorder prevalence among older adults demonstrated by Martens *et al.* (2007).

Several correlates of older adults' MHS underutilization have been identified, including a lack of perceived need for MHS (Yang and Jackson, 1998; Klap *et al.*, 2003; Karlin *et al.*, 2008; Quinn *et al.*, 2009), the desire to handle mental illness without help (Mackenzie *et al.*, 2010), stigma associated with mental illness and its treatment (US Department of Health and Human Services, 1999; James and Buttle, 2008; Pettigrew *et al.*, 2010), and the primary use of general practitioner medical doctors who may provide inadequate MHS or fail to refer patients to the appropriate services (Callahan, 2001; Alvidrez and Areán, 2002; Harman *et al.*, 2005; Tai-Seale *et al.*, 2005; Teasdale and Hill, 2006; James and Buttle, 2008; Unutzer *et al.*, 1999). Despite researchers' and clinicians' attention to these correlates, older adults' MHS utilization remains relatively low. Therefore, we turn our focus to the population of older adults who do use MHS and their experiences with those services for answers to improving utilization rates.

Mental healthcare recipients' satisfaction with the services they receive and the amount of benefit they perceive from those services are emerging topics of

interest for those who seek to develop new treatment programs or improve existing ones. Dissatisfaction with MHS could contribute to underutilization. This is especially true of older adults, in whom satisfaction with services may help foster an "indifference to stigma," because, as mentioned earlier, stigma is a major barrier to utilization (James and Buttle, 2008). Existing research on satisfaction with MHS, however, is usually limited to narrow evaluations of specific programs in certain settings (e.g., Boston *et al.*, 2001; Chen *et al.*, 2006; Areán *et al.*, 2007; Saur *et al.*, 2007). One study (Lippens and Mackenzie, 2011) using the Canadian Community Health survey reported high satisfaction with and perceived effectiveness of MHS among older adults (88.5% and 83.6%, respectively) but did not compare these rates with those among younger adults. Furthermore, an investigation of adults' satisfaction with medical health care (Xiao and Barber, 2008) revealed that older age was associated with higher levels of satisfaction. This age effect has not yet been demonstrated in regard to MHS.

With the use of nationally representative data, the present study examined age differences in satisfaction with and perceived benefit from MHS, as well as correlates of satisfaction and perceived benefit among adults who used MHS. We expected that levels of satisfaction with and perceived benefit from MHS would differ by age.

Methods

Sample

Data were drawn from the Collaborative Psychiatric Epidemiology Surveys (CPES), a merger of the National Comorbidity Survey Replica, the National Survey of American Life, and the National Latino and Asian American Study. The data were collected from 2001 to 2003 and sponsored by the National Institutes of Mental Health as an attempt to examine the prevalence, correlates, and risk factors associated with mental illness with a focus on minority populations. These surveys were collected face to face or over the phone with non-institutionalized adults, aged 18 years or older (Heeringa *et al.*, 2004; Pennell *et al.*, 2004). The interviewers were trained to administer the World Mental Health Composite International Diagnostic Interview (WMH-CIDI; Kessler and Üstün, 2004; Haro *et al.*, 2006) to diagnose any mental illnesses in CPES respondents in accordance with criteria from the DSM-IV.

The sampling techniques used for each of the component surveys involved the following: (i) primary sampling of US Metropolitan Statistical Areas, single counties, and groupings of counties; (ii) sampling of second-stage area segments, consisting of “geographically contiguous census blocks . . . with a minimum number of occupied housing units” (Heeringa *et al.*, 2004, pp. 222–223); (iii) third-stage sampling of housing units within the area segments that were subjected to screening interviews, according to a rate predetermined by a selection equation; (iv) systematic random sampling of actual housing units from the third-stage sample, whose residents were contacted in person by trained interviewers to obtain a listing of all eligible household members; and (5) random selection of one eligible household member to serve as the respondent. Using these procedures, we independently selected the national area probability sample for each of the three surveys. The National Survey of American Life core sample was designed to maximize the number of African American respondents and was supplemented with a special sample of households in areas of high Afro-Caribbean residential density. The National Latino and Asian American Study also used supplemental samples of geographic areas with high residential density for adults of Hispanic/Latino or Asian ancestry.

The sample for the current study was selected by including the following participants: (i) those who had received MHS in the past 12 months; (ii) those who had responded to items assessing their satisfaction with those MHS; and (iii) those who had been identified as having at least one DSM-IV diagnosis according to the trained interviewers’ administration of the WMH-CIDI. Participants were qualified to answer questions about their satisfaction with MHS by indicating which types of professionals they had seen “about problems with [their] emotions or nerves or [their] use of alcohol or drugs” within the past 12 months. The types of professionals whose services were assessed in the current analyses included psychologists, social workers, counselors, psychiatrists, other mental health professionals, medical doctors, spiritual advisors, and healers.

To make comparisons across age groups, we included participants of all ages who met the aforementioned criteria. Included in the analysis were 1286 adults aged 18 to 87 years: 330 adults aged 18–29 years, 763 adults aged 30–54 years, and 193 adults aged 55 years or older.

Measures

Demographic variables. Sample characteristics included participants’ ages (continuously measured), race/ethnicity

(1 = “Asian”, 2 = “Latino/Hispanic”, 3 = “Black/African-American”, and 4 = “non-Hispanic White”), gender (1 = “male” and 2 = “female”), marital status (1 = “married/cohabiting” and 2 = “divorced/separated/widowed/never married”), employment status (1 = “employed” and 2 = “unemployed/not in labor force”), years of education (1 = “0–11 years”, 2 = “12 years”, 3 = “13–15 years”, and 4 = “greater than or equal to 16 years”), and household income (continuously measured and top-coded at \$200,000).

Objective and perceived mental health need variables. The present analyses include only those participants with an objective need for MHS, as determined by the presence of at least one DSM-IV diagnosis. The trained CPES interviewers assessed respondents for each of the 23 DSM-IV diagnoses using the WMH-CIDI. For descriptive purposes, the prevalence rates of the 23 diagnoses in our sample are listed in Table 1.

Another measure of objective mental health need included in the analyses was the total number of DSM-IV diagnoses. This variable was constructed by summing the numerical equivalents of a participants’ scores on items representing the presence or absence of each of the psychiatric diagnoses listed in Table 1 (where 1 = “endorsed” and 0 = “not endorsed”). The possible summated number of psychiatric diagnoses ranged from 1 to 23.

Participants’ perceived need for MHS was also taken into account by assessing their self-rated health and self-rated mental health. These were determined by participants’ responses to the question, “How would you rate your overall [physical/mental] health—excellent, very good, good, fair, or poor?” These responses were reverse-coded on an ordered scale from 1 (*poor*) to 5 (*excellent*).

Outcome variables.

1. Satisfaction with mental health services. Only participants who responded to items evaluating their satisfaction with the MHS they had received were included in the current analyses. General satisfaction with MHS was assessed by the item, “In general, how satisfied are you with the treatments and services you received from the [specific MHS provider] in the past 12 months—very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, or very dissatisfied?” Responses were reverse-coded to range from 1 (*very dissatisfied*) to 5 (*very satisfied*).

Table 1 Rates of DSM-IV diagnoses by age group ($n = 1286$)

DSM-IV diagnosis	Age groups			χ^2	p
	18–29 ($n = 330$) %	30–54 ($n = 763$) %	55+ ($n = 193$) %		
Adult separation anxiety disorder	9.1	6.4	2.6	8.019	0.018*
Agoraphobia without panic disorder	7.6	9.2	13.0	4.217	0.121
Alcohol abuse	14.8	6.6	1.6	34.354	0.000***
Alcohol dependence	7.6	5.5	3.1	4.642	0.098
Anorexia nervosa	0	0.1	0	0.686	0.710
Attention deficit disorder	12.4	7.9	0.5	17.280	0.000***
Binge eating disorder	3.3	3.9	2.6	0.880	0.644
Bipolar I	6.4	3.7	1.6	7.732	0.021*
Bipolar II	3.0	3.7	4.7	1.224	0.542
Bulimia nervosa	2.1	1.3	0	4.202	0.122
Conduct disorder	2.7	0.8	0	8.315	0.016*
Drug abuse	8.2	4.3	0	18.817	0.000***
Drug dependence	2.7	2.1	0	4.982	0.083
Dysthymia	9.4	17.3	16.6	11.548	0.003**
Generalized anxiety disorder	15.2	24.0	25.4	12.086	0.002**
Intermittent explosive disorder	16.1	11.4	5.2	12.943	0.002**
Major depression	39.4	41.3	40.9	0.344	0.842
Nicotine dependence	8.5	7.9	6.7	0.103	0.950
Oppositional defiant disorder	4.8	2.6	0.5	6.061	0.048*
Panic disorder	12.7	18.5	19.2	6.057	0.048*
Posttraumatic stress disorder	17.9	19.7	22.3	1.502	0.472
Social phobia	30.0	29.6	28.5	0.137	0.934

Note:

* $p < 0.05$,

** $p < 0.01$,

*** $p < 0.001$.

2. Perceived benefit from mental health services.

Amount of perceived benefit from MHS received in the past year was assessed by the item, "Did the [specific MHS provider] help you a lot, some, a little, or not at all?" Responses to this item were reverse-coded to range from 1 (*not at all*) to 4 (*a lot*).

Data analysis. Descriptive analyses were used to present sample characteristics and compare across age groups using chi-squared tests and *t*-tests. Multiple linear regression analyses were used to predict respondents' satisfaction with and perceived benefit from MHS. The main effects of the demographic characteristics and objective and perceived mental health need variables were entered in block 1. After controlling for the variables from block 1, we entered the interaction variables in block 2 to identify any possible moderators of the effect of age. All analyses were conducted using IBM PASW (Endicott, NY, USA).

Results

Sample demographics and study variables. As shown in Table 2, the mean age of the sample was 40.55 years

($SD = 13.88$), and age ranged from 18 to 87 years. About 70% were women, 43.1% were married, and 54.4% were employed. The middle and older adult groups were significantly more likely to be married ($\chi^2 = 21.112$, $p < 0.001$), and older adults were significantly less likely to be employed ($\chi^2 = 96.745$, $p < 0.001$). The racial/ethnic distribution of the sample was 49.8% non-Hispanic White, 24.0% Black/African American, 19.4% Hispanic/Latino, and 4.6% Asian. Approximately 52.4% of the sample had at least some college education, with older adults likely to have less education ($\chi^2 = 42.966$, $p < 0.001$), and the sample had a mean household income of \$47,963.89 ($SD = \$47,279.64$). Middle adults had the highest mean income ($M = \$51,071.63$), and older adults had the lowest ($M = \$37,386.82$, $F = 6.484$, $p < 0.01$).

The total number of DSM-IV diagnoses ranged from 1 to 15. The majority of the sample had only one DSM-IV diagnosis ($n = 522$, 40.6%), but the mean number of diagnoses for the sample was 2.55 ($SD = 2.01$). The mean self-rating of physical health was 2.82 ($SD = 1.26$), and the mean self-rating of mental health was 2.86 ($SD = 1.20$), indicating that the sample generally had "good" to "very good" self-rated health and mental health. Older age was significantly

Table 2 Sample characteristics of MHS users (n = 1286)

Characteristic	Age groups				χ^2 or F
	Total sample (n = 1286) % or M \pm SD	18–29 (n = 330) % or M \pm SD	30–54 (n = 763) % or M \pm SD	55+ (n = 193) % or M \pm SD	
Age	40.55 \pm 13.882				8.058
Race/ ethnicity					
Asian	4.6	6.9	4.1	3.2	
Black	24.0	21.5	25.4	25.9	
Hispanic/Latino	19.4	22.1	18.6	21.2	
Non-Hispanic White	49.8	49.5	51.8	49.7	
Female	70.5	68.8	71.3	70.5	0.698
Married	43.1	32.7	47.7	42.5	21.112***
Employed	54.4	63.2	58.9	22.3	96.745***
Years of education					42.966***
\leq 11 years	20.3	17.0	17.8	35.8	
12 years	27.3	27.6	27.8	34.9	
13–15 years	30.4	36.7	29.4	23.8	
\geq 16 years	22.0	18.8	25.0	15.5	
Household income	\$47,963.89 \pm \$47,279.64	\$46,842.86 \pm \$48,075.71	\$51,071.63 \pm \$47,466.25	\$37,386.82 \pm \$43,633.73	(6.484)**
Self-rated health (1–5)	2.82 \pm 1.26	3.41 \pm 1.08	2.74 \pm 1.27	2.29 \pm 1.14	(28.376)***
Self-rated mental health (1–5)	2.86 \pm 1.20	3.34 \pm 1.06	2.79 \pm 1.23	2.44 \pm 1.09	(19.713)***
Number of DSM-IV diagnoses	2.44 \pm 1.81	2.55 \pm 2.01	2.46 \pm 1.78	2.17 \pm 1.54	(2.939)
Satisfaction with MHS (1–5)	3.89 \pm 1.13	3.78 \pm 1.16	3.90 \pm 1.14	4.06 \pm 1.01	(3.698)*
Perceived benefit from MHS (1–5)	3.06 \pm 1.04	2.95 \pm 1.09	3.07 \pm 1.03	3.20 \pm 0.98	(3.652)*

Note: MHS, mental health service.

* $p < 0.05$,

** $p < 0.01$,

*** $p < 0.0001$.

associated with lower ratings of both physical and mental health ($F = 28.376$, $p < 0.001$; and $F = 19.713$, $p < 0.001$, respectively).

With regard to the outcome variables, the sample was generally satisfied with the MHS they had received during the past year. The mean rating for level of satisfaction with MHS received was 3.89 ($SD = 1.13$), indicating that respondents felt generally "satisfied" with MHS. The mean rating for amount that the MHS helped was 3.06 ($SD = 1.04$), indicating that respondents felt the MHS they received helped "some." Older adults were most satisfied with and perceived the most benefit from the MHS they received ($F = 3.698$, $p < 0.05$; and $F = 3.652$, $p < 0.05$, respectively).

Table 3 reports age differences in the subtypes of MHS used and in respondents' satisfaction with and perceived amount of benefit from each subtype. Older adults were significantly less likely than younger adults to see psychiatrists ($\chi^2 = 7.965$, $p < 0.05$), social workers ($\chi^2 = 7.965$, $p < 0.05$), counselors ($\chi^2 = 7.965$, $p < 0.05$), and other mental health professionals ($\chi^2 = 7.965$, $p < 0.05$). Older adults were significantly more likely than younger adults to seek MHS from medical doctors ($\chi^2 = 7.965$, $p < 0.05$). However, older adults were significantly more likely to be satisfied with services received from medical doctors ($F = 4.638$, $p < 0.01$), psychologists ($F = 5.055$, $p < 0.01$), and other health professionals ($F = 4.099$, $p < 0.05$) and perceived significantly more benefit from services received from psychiatrists ($F = 3.766$, $p < 0.05$), medical doctors ($F = 3.116$, $p < 0.05$), psychologists ($F = 4.357$, $p < 0.05$), and other health professionals ($F = 5.344$, $p < 0.01$).

Regression models of satisfaction with and perceived benefit from mental health services. Table 4 summarizes the results of the multiple regression analyses performed for the outcome variables of satisfaction with and perceived benefit from MHS. In the first block, older age was found to be significantly associated with higher levels of satisfaction with MHS ($\beta = 0.105$, $p < 0.05$) and higher ratings of perceived benefit ($\beta = 0.106$, $p < 0.05$). Better self-rated mental health was also significantly associated with higher satisfaction ($\beta = 0.186$, $p < 0.001$) and higher estimates of perceived benefit ($\beta = 0.177$, $p < 0.001$). Conversely, greater numbers of comorbid DSM-IV diagnoses were associated with lower satisfaction ($\beta = -0.089$, $p < 0.05$), but not perceived benefit ($\beta = -0.075$, $p = 0.069$).

In the second block, after the variables from block 1 has been controlled for, only the interaction of age and

marital status was found to be significantly associated with satisfaction with MHS ($\beta = -0.298$, $p < 0.05$). To interpret this significant interaction, we performed correlational analyses of the effects of age on satisfaction with MHS and perceived benefit of MHS for both married/cohabiting and unmarried respondents to examine the relationship of age and marital status. We were able to confirm that marital status served as a moderator of the effects of age on satisfaction with and perceived benefit from MHS. That is, for those who were married, age was positively correlated with satisfaction ($\beta = 0.102$, $p < 0.05$) and amount of perceived benefit ($\beta = 0.105$, $p < 0.05$), but for unmarried respondents, age had no significant effect on either satisfaction with MHS ($\beta = 0.050$, $p > 0.05$) or perceived amount of benefit of MHS ($\beta = 0.067$, $p > 0.05$).

Discussion

Previous research reports that older adults are less likely than younger adults to seek MHS for their objective or perceived mental health needs (Mackenzie *et al.*, 2010). In the present study, we focused on those who used MHS and their experiences with those services. Using samples from nationally representative data, we were particularly interested in investigating variations by age in satisfaction with and perceived benefit from MHS.

Our major finding was apparent age differences in satisfaction with and perceived benefit from MHS. Older MHS users were generally more satisfied and perceived greater benefit from the services they received compared with their younger counterparts. This is consistent with previous research demonstrating older adults' positive experiences with or attitudes toward MHS use (Chen *et al.*, 2006; Xiao and Barber, 2008; Lippens and Mackenzie, 2011). This finding may indicate that the reasons underlying their underutilization of services do not include poor perceived quality of MHS—at least for those older adults who have previously received MHS. This finding also suggests that if utilization rates can be increased, older adults will likely have positive experiences with MHS. Therefore, identifying and decreasing barriers to utilization should be a public health priority. A key to increasing older adults' MHS use may be for previous MHS recipients to share their positive experiences via public service announcements, thereby dispelling doubts or stigmatization in older adults who have never used MHS.

Table 3 Sub-analyses of CPES respondents' past year MHS use, satisfaction, and amount of perceived benefit by age ($n = 1286$)

	Service provider subtype							
	Psychiatrist ($n = 430$), $M \pm SD$	Medical doctor ($n = 641$), $M \pm SD$	Psychologist ($n = 246$), $M \pm SD$	Social worker ($n = 133$), $M \pm SD$	Counselor ($n = 242$), $M \pm SD$	Other health professionals ($n = 96$), $M \pm SD$	Spiritual advisor ($n = 241$), $M \pm SD$	Healer ($n = 77$), $M \pm SD$
Percent of group who used MHS								
18-29	27.3	37.9	21.2	10.0	25.8	5.5	19.1	5.5
30-54	36.0	51.2	19.0	11.8	18.0	9.2	19.4	6.9
55+	33.7	64.8	16.1	5.2	10.4	4.1	15.5	3.1
Total	33.4	49.8	19.1	10.3	18.8	7.5	18.7	6.0
χ^2	7.965*	36.689***	2.107	7.323*	19.806***	8.238*	1.538	4.254
Satisfaction with services								
18-29	3.68 ± 1.15	3.83 ± 1.14	3.68 ± 1.23	4.06 ± 1.03	4.18 ± 0.90	3.57 ± 1.03	4.37 ± 0.79	4.48 ± 0.60
30-54	3.91 ± 1.14	3.92 ± 1.11	4.06 ± 1.06	3.98 ± 0.98	4.12 ± 1.05	4.15 ± 0.92	4.58 ± 0.65	4.38 ± 0.95
55+	3.94 ± 1.05	4.21 ± 0.93	4.35 ± 0.84	3.90 ± 1.10	4.15 ± 0.81	4.50 ± 0.76	4.45 ± 0.83	4.43 ± 0.79
Total	3.87 ± 1.13	3.96 ± 1.09	3.99 ± 1.11	3.99 ± 1.00	4.15 ± 0.98	4.06 ± 0.96	4.51 ± 0.72	4.40 ± 0.85
F	1.603	4.638**	5.055**	0.124	0.094	4.099*	2.376	0.108
Perceived benefit from services								
18-29	2.87 ± 1.10	2.98 ± 1.03	2.94 ± 1.13	3.20 ± 1.05	3.42 ± 0.80	2.62 ± 1.24	3.52 ± 0.73	3.38 ± 0.74
30-54	3.18 ± 0.96	3.11 ± 1.03	3.31 ± 0.92	3.27 ± 0.93	3.24 ± 0.97	3.38 ± 0.88	3.69 ± 0.60	3.54 ± 0.95
55+	3.23 ± 0.98	3.30 ± 0.96	3.45 ± 0.81	3.00 ± 1.05	3.30 ± 0.73	3.38 ± 0.74	3.64 ± 0.49	3.71 ± 0.49
Total	3.12 ± 1.00	3.12 ± 1.02	3.22 ± 0.98	3.23 ± 0.97	3.31 ± 0.90	3.23 ± 0.99	3.64 ± 0.63	3.51 ± 0.87
F	3.766*	3.116*	4.357*	0.362	1.040	5.344**	1.838	0.441

Note: MHS, mental health services; CPES, Collaborative Psychiatric Epidemiology Surveys.

Satisfaction measured on scale from 1 (poor) to 5 (excellent); perceived benefit measured on scale from 1 (not at all) to 4 (a lot).

* $p < 0.05$,

** $p < 0.01$,

*** $p < 0.001$.

Table 4 Regression analyses of satisfaction with and perceived benefit from MHS ($n = 1286$)

Predictor	Satisfaction with MHS			Amount of perceived benefit from MHS		
	β	T	p	β	t	p
Block 1						
Age	0.105	2.446	0.015*	0.106	2.458	0.014*
Sex	0.069	1.732	0.084	0.076	1.893	0.059
Household income	0.011	0.248	0.804	0.018	0.383	0.702
Years of education	-0.041	-0.941	0.347	-0.043	-0.966	0.335
Marital status	0.008	0.185	0.853	0.021	0.493	0.622
Total no. of DSM diagnoses	-0.089	-2.169	0.030*	-0.075	-1.820	0.069
SRH	0.037	0.753	0.452	0.025	0.500	0.617
SRMH	0.186	3.855	0.000**	0.177	3.666	0.000**
Block 2						
Sex \times age	-0.129	-1.023	0.307	-0.049	-0.387	0.699
Household income \times age	0.030	0.207	0.836	0.045	0.313	0.755
Years of education \times age	-0.075	-0.538	0.591	-0.052	-0.368	0.713
Marital status \times age	-0.298	-2.246	0.025*	-0.175	-1.304	0.193
SRH \times age	-0.041	-0.254	0.800	-0.069	-0.417	0.677
SRMH \times age	0.249	1.513	0.131	0.150	0.903	0.367
Number of DSM diagnoses \times age	-0.024	-0.526	0.599	-0.017	-0.364	0.716

Note: MHS, mental health service; SRH, self-rated health; SRMH, self-rated mental health.

* $p < 0.05$,

** $p < 0.001$.

Another interesting finding was that better mental health status predicted greater satisfaction and perceived benefit from MHS. This finding may indicate that some of the variation in satisfaction with and perceived benefit from MHS must be attributed to preexisting client characteristics and therefore cannot be addressed through provider or system changes. That is, clients who are healthier to begin with may attribute their wellness to the treatment and therefore report greater satisfaction and perceived benefit, whereas clients who are less healthy may associate their poor health with the MHS they receive and consequently feel less satisfied and perceive fewer benefits from those MHS (Xiao and Barber, 2008). The finding that having fewer psychiatric diagnoses predicted greater satisfaction with MHS but not greater perceived benefit from MHS also merits attention. Previous studies have shown that adults with multiple comorbid mental disorder diagnoses have greater perceived unmet mental health-care need than their single-diagnosis counterparts, despite being more likely to seek and utilize MHS (Nelson and Park, 2006; Urbanoski *et al.*, 2007, 2008). The same mechanism underlying this phenomenon may be at work in our sample. Nevertheless, the nuanced difference in multiple-diagnosis MHS users' likelihood to be less satisfied with their MHS, but to perceive no less benefit from them, warrants further investigation.

The significant interaction effect of marital status and age on satisfaction with and perceived benefit from MHS deserves discussion. Marital status served

as a moderator for the effects of age on satisfaction and perceived benefit, so that for married or cohabiting respondents, older age predicted higher satisfaction with and perceived benefit from MHS, but for unmarried respondents, age had no effect. The mechanisms of this moderation are not clear, but previous research has demonstrated the differential effect of marital status on overall life satisfaction and mental health—with married people being both happier and healthier (Holt-Lunstad *et al.*, 2008; Williams *et al.*, 2010; Kelly *et al.*, 2011). Those with higher overall life satisfaction and better mental health may consequently be more satisfied with and perceive greater benefit from the MHS they receive. Furthermore, among older adults, it is common for spouses to serve as caregivers (Wolff and Kasper, 2006). Those who are married may be more likely to seek and properly utilize MHS, or their spouses and families may be more actively involved in their MHS utilization, thereby increasing their satisfaction with and benefit from those services.

Some limitations of the study should be noted. Although CPES data are nationally representative, disproportionate sample sizes across different age groups limit our study. Another limitation is related to the cross-sectional nature of our data. The use of a cross-sectional design did not permit us to demonstrate attitude changes over the life span. Neither can the current design eliminate the possibility of cohort effects, which are always a concern for studies of age differences. Furthermore, the CPES data are now a

decade old. Diagnosis and treatment rates for older adults have increased in recent years (US Department of Health and Human Services, 2007), and treatment has increasingly favored psychopharmacological medications (Akincigil *et al.*, 2011). Older adults' perceptions of the treatments they received may have evolved as well. The effect of race/ethnicity was not considered in the present study. Given that previous studies report that racial/ethnic and cultural factors are correlated with satisfaction and perceived benefit from MHS (e.g., Abe-Kim *et al.*, 2007; Jackson *et al.*, 2007), future research should examine racial/ethnic disparities in MHS satisfaction in addition to age differences.

Notwithstanding the limitations noted previously, our research clearly suggests significant age differences in satisfaction with and perceived benefit from services among MHS users. This finding has significant implications for clinicians, as well as for future research and program development aimed at improving MHS utilization. Older adults have different experiences with MHS and therefore should be considered and treated with their unique needs in mind. Our findings suggest that when older adults utilize MHS, they are generally satisfied and perceive much benefit from those services. Therefore, future research should focus on increasing older adults' MHS utilization rates. For us to better understand these low utilization rates, future research should examine barriers to seeking services by those who need them, with a view to age and racial/ethnic differences (Abe-Kim *et al.*, 2007; Kim *et al.*, 2010; Sorkin *et al.*, 2011). Once these barriers to utilization are identified, MHS providers and community health advocates will be better able to target older adults in need of care through advertisement and education campaigns designed to reduce the stigmatization of mental illness and its treatment, and specific efforts can be made to minimize systemic barriers to MHS use (i.e., lack of transportation, financial burden, or the lack of geropsychology specialists).

Key points

- Older adults were more satisfied with and perceived more benefit from the mental health services (MHS) they received than younger adults.
- Better self-rated mental health and fewer psychiatric diagnoses were associated with greater satisfaction and perceived benefit from MHS.
- Marital status served as a moderator for the effects of age on satisfaction with and perceived benefit from MHS: that is, for married respondents, older age significantly predicted higher satisfaction and perceived benefit, but for unmarried respondents, age had no effect.

Conflict of interest

None declared.

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