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Interest and Use of Mental Health and Specialty Behavioral Medicine Counseling in US Primary Care Patients

Kelly G. Baron · Emily Lattie · Joyce Ho · David C. Mohr

Abstract
Background Counseling interventions have the potential to improve health and quality of life for primary care patients, but there are few studies describing the interest in and utilization of counseling among this patient population in the USA.
Purpose The purpose of the study was to evaluate interest in mental health and specialty behavioral medicine counseling and predictors of utilization over 1 year among US primary care patients.
Method Participants in this two-survey longitudinal study included 658 primary care patients in an urban US academic medical center (461 females, age M=51.05, SD=15.46 years). Retention rate was 61.2% at survey 2. Patient demographics, depression, anxiety, and interest in counseling services were assessed through a survey mailed 1 week following an outpatient appointment. Respondents to survey 1 were re-contacted 1 year later to assess. Interest and use of the following counseling services were evaluated in the relevant subgroups: mental health (the entire sample and patients with elevated anxiety and/or depression), health/lifestyle (overweight and obese participants), smoking cessation (current and occasional smokers), and pain management (participants with elevated daily pain ratings).
Results At survey 1, 45.7% of the sample reported interest in mental health counseling, and 58.9% of the sample reported interest in behavioral medicine counseling. Among overweight or obese participants, 59.9% were interested in health/lifestyle counseling. Among smokers, 55.3% were interested in smoking cessation, and among participants with chronic pain, 33.8% were interest in pain management. Rates of utilization of services at survey 2 were 21.3% for mental health, 7.7% for health/lifestyle, 6.7% for smoking cessation, and 6.6% for pain management. Interest in receiving services at survey 1 was the strongest predictor of utilization.
Conclusion Results demonstrate high interest but low utilization over 1 year among US primary care patients. Identifying patients interested in counseling services and reducing barriers may help facilitate receipt of services for those with interest and need for behavioral treatments.

Keywords Counseling · Behavioral medicine · Primary care · Obesity · Chronic pain · Smoking cessation

Introduction

There is strong empirical support for the effectiveness of psychological and behavioral interventions for a wide range of psychiatric and health problems including depression, obesity, and chronic pain [1]. These interventions have the potential to improve quality of life and reduce costs to society through reducing morbidity, increasing employee productivity, and reducing healthcare costs [2, 3]. Given that more than 50% of deaths are due to heart disease, cancer, and stroke as well as the high prevalence of mental disorders, there is clearly a need to improve the dissemination

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of effective mental health and behavioral medicine counseling interventions [4, 5].

Successful referral to evidence-based treatment is critical to effective management of mental health and lifestyle related illnesses. The primary care setting presents an important and potentially underutilized opportunity to evaluate and refer patients to psychological and behavioral interventions. In the Australian National Surveys of Mental Health and Wellbeing, 60% of individuals with reported mental health problems did not seek treatment, even though 80% of this group saw a general practitioner in the past year [6]. Studies support that referral for specialty care is important to the treatment of many psychological and behavioral conditions. Although there is some support for the usefulness of brief office-based counseling, the majority of studies have found that treatments in the primary care setting lack the intensity needed for lasting effects of longer counseling interventions [7, 8]. A systematic review of primary care based weight loss programs found that low to moderate intensity counseling was not sufficient to produce clinically significant weight loss [9, 10]. In smoking cessation, brief counseling in medical visits has been shown to increase quit rates only modestly, such as an additional 2–3%, compared with no intervention [11]. Given the efficacy of many counseling treatments for management of mental health and behavioral health problems, partnerships between primary care and psychological counseling referral resources are integral to augment the office based counseling for behavioral health issues in medical patients [12].

There has been limited research examining patient interest and utilization of counseling services, and even less has been conducted in the primary care setting. In the National Comorbidities Study, an epidemiologic study conducted in the USA, 55.2% of respondents with DSM-IV diagnosed mental health disorders reported they felt the need to see a professional for mental health problems in the past year but did not seek care [13]. Rates of patients with diagnosed mental health disorders in countries with comprehensive health care are lower but still reflect a significant number of untreated patients. In a population based survey in Canada, 21.6% of the sample with mental and substance abuse problems in the past 12 months reported they needed psychological services but did not receive it [14]. Also, the Netherlands Study of Depression and Anxiety found that 21% of respondents with depression or anxiety stated they had a need for psychological care but did not receive it [15]. Given these findings, more research is needed to understand how to best identify and effectively treat patients in the primary care setting who are in need of more intensive counseling interventions.

The present study is a longitudinal observational study of interest and reported utilization of mental health and behavioral medicine counseling services among primary care patients at an urban academic medical center in the USA. Results of this study will provide basic information about patient reported interest in different types of services and also follow-up rates for each type of service. Interest in and utilization of individual counseling services for mental health, as well as specific behavioral medicine counseling services (health/lifestyle counseling, such as weight loss and physical activity, smoking cessation counseling, and pain management counseling) were examined. This study also evaluated demographic, psychological, and medical predictors of interest and utilization of counseling services. It was predicted that interest in services would be high, but utilization of services over the following year would be low. In addition, we predicted there would be variability in interest and utilization across the different types of counseling services.

Methods

Design

This was a prospective, longitudinal design involving two waves of self-report questionnaires and a review of medical records.

Participants and Procedure

Patients were recruited from the Northwestern University Division of General Internal Medicine outpatient primary care clinic. Survey 1 was collected from July–November 2007, and survey 2 was collected August–December 2008. In survey 1, packets containing consent forms, the survey, and a stamped/pre-addressed envelope were mailed to patients within a week of an outpatient appointment at the Internal Medicine clinic. In survey 2, patients who responded to survey 1 were re-contacted 1 year later by mail and asked to complete a follow-up questionnaire. Physicians approved patient lists prior to mailing, and participants received a $10 check for participation in each survey. This study was approved by the Northwestern University Institutional Review Board, and participants completed written informed consent for both surveys.

Questionnaires

Survey 1 Measures

*Demographics (*age, gender, relationship status, and ethnicity) were assessed by self-report.

Average current pain ratings were assessed by self-report using a 1–10 pain scale, with 1 indicating “no pain” and 10 indicating “worst pain imaginable.”

Obesity, expressed as BMI (kilogram per square meter) was extracted from medical records using the recording closest to the time of the questionnaire. Normal weight was defined as BMI < 25.0, overweight was defined as BMI 25–29.9, and obese was defined as BMI ≥ 30.

Current smoking status was measured by one item from the Behavioral Risk Factor Surveillance System, "Do you now smoke cigarettes?" Response options included "every day," "some days," and "not at all" [16].

Health status was measured using one item from the Short Form Health Survey (SF-36): "In general, would you say your health is…?"[17]. Response options ranged from 1 (excellent) to 5 (poor).

Depressive symptoms were measured by the eight-item version of the Patient Health Questionnaire (PHQ-8), which is identical to the PHQ-9 minus the suicidal ideation item [18]. The eight-item questionnaire has been found to be reliable and valid for depressive disorders in medical populations [19].

Anxiety was measured by the seven-item version of the Generalized Anxiety Disorders Questionnaire (GAD-7) [20]. This measure was found to be reliable and valid with adequate sensitivity and specificity for diagnosis of generalized anxiety disorder in primary care [20].

History of psychotherapy was assessed with a single question, "Have you ever been to individual counseling or psychotherapy (e.g. meeting with a counselor or therapist on a regular basis for stress, depression, anxiety, or lifestyle change, such as weight loss, exercise, stopping smoking, etc.)?" Response options were "yes" and "no."

Current psychotherapy was assessed by the question "Are you currently in individual psychotherapy or counseling?" Response options were "yes" and "no."

Interest in mental health and behavioral medicine counseling was assessed by the following question, "Which of the following services would you currently be interested in using if they were available to you? (Please select all that apply.)" Options included "Counseling for stress, anxiety etc.," "Counseling for health and lifestyle (weight loss, diet, exercise, etc.)," "Counseling to stop smoking," and "Counseling for pain management." The item, "I would not be interested in any counseling services," was also provided as a response option.

Survey 2 (1 Year Follow-Up)

Utilization of mental health and behavioral medicine counseling was assessed by the following question, "Have you attended counseling or individual therapy in the past year?" Participants were asked to check all that apply. Options included "Counseling for stress, depression or anxiety, etc.," "Counseling for health and lifestyle (weight loss, diet, exercise, etc.)," "Counseling to stop smoking," and "Counseling for pain management."

Data Analysis

Data were analyzed using SPSS (version 17.0). Descriptive statistics were computed using means and frequencies. Comparisons between responders/non-responders were conducted using *t*-tests for independent means (for continuous variables) and chi square tests (for categorical data).

Data for the primary aims were analyzed using a series of logistic regressions. Equations were constructed to predict interest and utilization of each counseling type (stress/anxiety, health/lifestyle, smoking cessation, and pain). Demographics (age, gender, race), self-rated health, and mental health scores (depression, anxiety) were entered as covariates in all models. In addition, BMI was entered in models for health/lifestyle interventions, smoking status (occasional versus every day) was entered in models of smoking cessation, and pain ratings were entered in models of pain management. Predictors were reported as odds ratios (OR) and 95% confidence intervals (95% CI).

Analyses of predictors of interest and utilization of mental health treatment were conducted only for the relevant populations. Models of mental health treatment were conducted for the entire sample as well as for the subset of participants with elevated anxiety and depression scores. Models for health/lifestyle counseling were only conducted in overweight or obese participants. Models of smoking cessation were only conducted in occasional and daily smokers, and models of counseling for pain were conducted only in participants with daily pain ratings > 3. Statistical significance was defined at $p<0.05$ on two-tailed tests.

Results

Participant Characteristics

Survey 1 was mailed to 3,265 English-speaking adult patients. Consent forms were returned by 674 participants. Of those 674 surveys, 16 surveys were returned blank and eight surveys were excluded for missing data on key items (i.e., interest in counseling services). Therefore, the final number of participants included in this sample was 650 primary care outpatients. The response rate was 19.9% (n=650). Data from medical records allowed us to compare respondents to non-respondents for survey 1. There were several demographic differences among respondents versus non-respondents. Respondents were younger (M=51.9,

SD=15.1 versus M=53.5, SD=16.4 years), more likely to be female (70.8% versus 63.6%), and more likely to be White, rather than African American and Hispanic (30, 5.1, and 2.6% versus 23.9, 17.9, and 11.0%, respectively). Survey 2 was mailed to respondents who completed the first survey. Response rate for survey 2 was 61.2% (n=391 or 12% of the original sample).

Participant characteristics for both survey 1 and survey 2 are listed in Table 1. There were no significant differences between demographics and other sample characteristics between survey 1 and survey 2 participants. The sample was predominantly female and white. The majority of the sample had insurance coverage, but details of specific plans were not available (i.e. private insurance versus Medicare or Medicaid). Smokers (every day or some of the time) comprised 15.8% (n=103) of the sample, and 50.8% of the sample reported average daily pain≥3 on a 10-point scale (n=328). The majority of participants (63.2%, n=411) were overweight or obese (BMI≥25). At survey 1, approximately half reported previously attending any type of mental health or behavioral medicine counseling, and 13.8% (n=90) reported currently attending any type of mental health or behavioral medicine counseling. In comparisons between participants who completed survey 1 but did not respond to survey 2, those who did not respond to survey 2 were slightly younger (age M=49.1, SD=16.1 years versus M=52.1, SD=14.9 years) and had poorer self-rated health (M=2.9 SD=1.0, M=2.7, SD=1). There were no differences in responses to items assessing interest in counseling services between participants who completed survey 1 only and participants who completed both surveys.

Interest in Mental Health and Behavioral Medicine Counseling at Survey 1

Overall Interest

At survey 1, 45.7% (n=297) of respondents reported interest in counseling for stress, depression, or anxiety, and 58.9% (n=383) reported interest in at least one type of behavioral medicine counseling (health/lifestyle, smoking cessation, or pain). Also, 10% (n=65) reported interest in "other" types

Table 1 Participant characteristics: survey 1 and survey 2

	Survey 1 participants (n=650)	Survey 2 participants (n=391)
Age (mean ± SD) (years)	51.9 (15.1)	52.1 (14.9)*
Female (n, %)	457 (70.3)	271 (69.3)
Ethnicity (n, %)		
White	399 (61.4)	249 (63.7)
African American	195 (30.0)	112 (28.6)
Hispanic	33 (5.1)	17 (4.3)
Asian or Pacific Islander	17 (2.6)	8 (2.0)
Other	6 (0.9)	5 (1/3)
Insured (n, %)	618 (95.1)	370 (96.4)
Depression (PHQ ≥ 10) (n, %)	132 (20.3)	75 (19.2)
Anxiety (GAD ≥ 10) (n, %)	144 (22.2)	80 (20.5)
Anxiety and/or depression (n, %)	184 (28.5)	101 (25.8)
Smoking status (n, %)		
Every day	66 (10.2)	42 (10.8)
Some days	37 (5.7)	17 (4.4)
Not at all	541 (83.2)	330 (84.6)
Don't know/not sure	1 (.8)	1 (.3)
BMI (n, %)		
0–24.9	239 (36.8)	143 (36.6)
25–29.9	190 (29.2)	122 (31.2)
≥ 30	221 (34.0)	126 (32.2)
Health rating (1 = excellent, 5 = poor)	2.8 (1.0)	2.7 (1.0)*
Pain rating (1 no pain to 10 extreme pain, M ± SD)	3.3 (2.2)	3.2 (2.2)
Previous counseling (n, %)	323 (49.7)	200 (51.4)
Current counseling (n, %)	90 (13.8)	55 (14.1)

Participants in survey 1 only were younger (age M=49.1, SD=16.1 years) and had poorer self-rated health (M=2.9, SD=1.0)

Missing data: insurance status n=10, smoking n=5, depression n=1, anxiety n=3, self-rated health n=2, pain n=5, previous counseling n=6, current counseling n=4

PHQ Patient Health Questionnaire, *GAD* Generalized Anxiety Disorder Questionnaire

*p<0.05 for comparisons between participants with surveys 1 and 2 data and participants with only survey 1 data

of counseling, and 26% (n=169) responded that they were not interested in any counseling services. See Fig. 1 for a comparison of interest and utilization.

Stress, Depression, and Anxiety

Participants with elevated depression and/or anxiety scores were more likely to be interested in counseling for stress, depression, or anxiety, compared to those below the cutoffs (69.6 versus 36.4, χ^2=58.43, p<0.0001). In multivariate logistic regression models predicting interest in counseling for stress, depression, and anxiety in the entire survey 1 sample, higher depression (OR=1.06, 95% CI=1.01–1.12, p=0.02) and anxiety scores (OR=1.15, 95% CI=1.09–1.21, p<0.001) were significant predictors. Gender, race, marital status, self-rated health, and depression were not associated with interest in counseling for stress, depression, or anxiety. When predictors of interest were tested in only the participants with elevated depression and/or anxiety, younger age predicted interest (OR=0.95, 95% CI=0.93–0.98, p=0.01) and higher depression scores predicted greater interest in counseling for stress, anxiety, or depression (OR=1.09, 95% CI=1.01–1.18, p=0.03).

Health/Lifestyle Counseling

Interest in health/lifestyle counseling was 59.9% (n=246) among overweight or obese participants. Overweight or obese participants were more likely to be interested in health/lifestyle counseling than normal weight participants (59.9% versus 34.3%, χ^2=39.45, p<0.0001). In multivariate logistic regression models conducted only among overweight and obese participants, female gender (OR=2.71, 95% CI=1.29–3.32, p=0.002) and BMI (OR=1.07, 95% CI=1.07–1.12, p<0.001) predicted greater interest. Age, race, marital status, self-rated health, depression, and anxiety were not significantly associated with interest in health/lifestyle counseling.

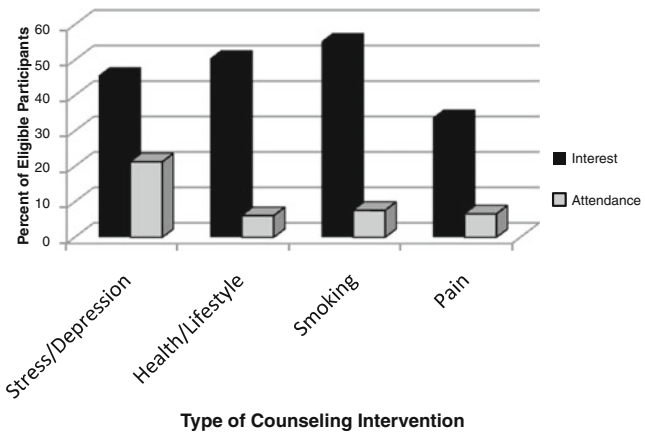

Fig. 1 Reported interest in and 1 year reported utilization of mental health and behavioral medicine counseling services. Note: Stress/anxiety/depression percentages pertain to the entire sample (survey 1, n=650; survey 2, n=391); health/lifestyle counseling percentages pertain to overweight and obese participants (survey 1, n=411; survey 2, n=248); smoking cessation percentages pertain to current smokers (survey 1, n=103; survey 2, n=59; and pain management counseling percentages pertain to participants with pain ratings ≥ 3 of 10 (survey 1, n=328; survey 2, n=192)

Smoking Cessation

Among smokers, 55.3% (n=57) were interested in counseling to stop smoking. Every day smokers were more likely to be interested in smoking cessation than occasional smokers (63.6% versus 40.5%, χ^2=5.12, p=0.02). In multivariate models, greater age (OR=1.04, 95% CI=1.01–1.08, p=0.02) was associated with interest in smoking cessation services, whereas white ethnicity was associated with lower interest in smoking cessation counseling (OR=0.38, 95% CI=0.16–0.92, p=0.032). Marital status, depression, and anxiety were not associated with interest in smoking cessation counseling.

Pain Management

Among participants with average daily pain ratings≥3, 33.8% (n=111) were interested in counseling for pain management. In multivariate analyses of participants with pain ratings≥3 out of 10, greater pain ratings were associated with interest in pain management counseling (OR=1.49, 95% CI=1.27–1.75, p<0.000), but demographics, self-rated health, depression, and anxiety were not associated with interest in pain management counseling.

Utilization of Mental Health and Behavioral Medicine Counseling at 1 Year Follow-Up

Overall Utilization

At the 1 year follow-up, 21.0% of the sample (n=82) reported attending counseling for stress, depression, or anxiety, and 10.0% (n=39) of the sample attended at least one of the behavioral medicine counseling types.

Stress, Depression, and Anxiety

Participants with elevated depression and/or anxiety scores at survey 1 were more likely report attending counseling for stress, depression, or anxiety at survey 2 (42.6% versus 18.8%, χ^2=22.68, p< 0.001). In multivariate logistic regression models of utilization in the entire sample, interest in mental health counseling (OR=3.81, 95% CI=2.06–7.05, p<0.0001) and survey 1 anxiety scores (OR=1.09, 95% CI=1.01–1.18, p=0.02) were

significant predictors of attendance. Age, gender, race, marital status, self-rated health, and depression at survey 1 were not associated with utilization of counseling at survey 2. When the logistic regression was conducted only for survey 1 respondents with elevated anxiety or depression scores, anxiety was a significant predictor of attendance (OR=1.13, 95% CI=1.01–1.26, p=0.03).

Health/Lifestyle Counseling

Utilization of health/lifestyle counseling was 7.7% (n=19) for overweight or obese participants. Overweight or obese participants at survey 1 were not more likely to report attendance in health/lifestyle counseling (2.5% versus 7.7%, χ^2=2.73, p=0.13). Among overweight and obese participants at survey 1, only interest in health/lifestyle counseling predicted utilization 1 year later (OR=7.86, 95% CI=1.68–36.66, p=0.009).

Smoking Cessation

Smoking cessation counseling was attended by 6.7% (n=4) of smokers. Of the four smokers at survey 1 who also reported attending smoking cessation counseling at survey 2, three were everyday smokers and one was an occasional smoker at survey 1. There were also six additional participants who did not report smoking at survey 1, but who reported receiving smoking cessation counseling at survey 2. One of those reported being an occasional smoker, two were former smokers at survey 1, and three reported being non-smokers at survey 1. None of the survey 1 variables were associated with smoking cessation utilization at survey 2.

Pain Management

Among the 13 participants with pain ratings≥3, 6.8% (n=13) of participants with chronic pain attended pain management counseling. Only interest in pain management counseling at survey 1 was associated with utilization (OR=4.47, 95% CI=1.02–19.59, p=0.047). Demographics, pain ratings, depression, and anxiety were not associated with utilization of pain management counseling. In addition, participant who did not have survey 1 pain ratings≥3 attended pain management counseling.

Discussion

In summary, we found that there was a high interest in counseling services in our sample of primary care patients, with over half reporting interest in at least one type of counseling if it was available to them. The group with the highest interest were overweight or obese participants (60% for health/lifestyle), and the lowest proportion of the population interested in a service were those with elevated pain ratings (34% for pain counseling). Despite the high levels of interest, follow-up rates in the following year were considerably lower. Follow-up was highest for mental health counseling (40% of those with elevated depression and/or anxiety scores). Across behavioral medicine areas, approximately 10% of the sample attended at least one type of behavioral medicine counseling. The large proportion of patients with a history of counseling in the past suggests that this sample was familiar with counseling and had access to counseling, particularly for mental health issues.

We found that as would be expected, patients with elevated depression and anxiety scores were more interested in mental health counseling. We also found that women were over twice as likely as men to be interested in health/lifestyle counseling. It has been previously reported that women have more favorable attitudes toward counseling and are more likely to seek out and be referred to weight loss interventions [21–23]. However, women were not more likely to report attending health/lifestyle counseling, which is consistent with prior reports of both patient and physician initiated referrals to weight loss programs [21]. We also found higher pain ratings were associated with greater interest in pain management counseling. The only predictors of utilization of counseling for health/lifestyle and pain were interest in those services at survey 1. In addition, utilization of counseling for stress, depression, or anxiety was strongly predicted by interest and also predicted by mental health scores at survey 1. However, we found that overweight or obese participants were more likely to report interest in health/lifestyle counseling, but they were not more likely to follow up with these services. These findings in overweight or obese participants suggest that interest is a stronger predictor of receipt of services than indices of need for the services, such as BMI.

Despite high levels of interest and a history of previous access to individual counseling in many patients, rates for most types of counseling were relatively low, particularly among behavioral medicine counseling types. It is possible that there is lack of availability for these particular types of counseling, or patients may not know how to access specialty counseling services. In studies of self-reported barriers to counseling (including mental health and behavioral medicine), the highest rated barrier to counseling in US populations was cost, but across several different countries, attitudinal barriers were common (e.g. the thought that the problem would get better on its own) [24, 25]. We found that depressive and anxiety symptoms were only associated with interest or utilization of counseling services for stress, anxiety, and depression, but not behavioral medicine interventions. This suggests depressed patients are more motivated for

mental health services but not necessarily other types of counseling.

It is difficult to compare follow-up rates in our study with other published reports because there have been few studies comparing several types of counseling services. In US epidemiologic studies, depressed patients are the most likely to report receiving some sort of mental health treatment, but there is a lag of 6–8 years between illness onset and treatment [26, 27]. In US medical populations, follow-up after referral for mental health interventions is known to be poor [28]. Rates of mental health treatment may be higher in countries with national health insurance plans. A study in Australia found that 84% of patients with a perceived need for psychiatric medication and 50–60% of patients with a perceived need for mental health counseling had their needs met in the past year [29]. In addition to mental health counseling, behavioral medicine counseling utilization is also reported to be low, particularly when they are offered at a cost to patients. A study in the USA found that referral and enrollment in weight loss and smoking cessation programs dropped from 21% to 0.7% when the funding for the programs changed from free to a modest cost [30]. This suggests that access to services, without reducing financial burden to patients, does not improve follow-up to these programs.

Results of our study have several limitations. The response rate to our first sample may suggest a selection bias toward those who have utilized counseling services in the past. This may have led to an overestimation of interest in counseling. Furthermore, due to a high rate of insurance, location in an urban hospital-based healthcare system, and reports of high utilization of mental health services in the past, the sample is likely to have greater access to counseling services than the general population. Therefore, these data should be interpreted with caution, because they likely do not reflect a true prevalence of interest and utilization. The demographics of non-respondents (younger, more predominantly male) are less likely to use counseling services. On the other hand, rates of reported utilization of services at survey 2 were still low for many types of services, despite having possibly higher motivation and better than average access to counseling. The small sample of smokers makes it difficult to draw any conclusions regarding smoking cessation counseling. In addition, aspects of our assessment make it difficult to draw conclusions over which barriers prevented the individuals from seeking treatment. The measures of follow-up were self-reported and may not have taken into account other forms of behavioral care (e.g., pastoral counseling). Finally, this study did not measure patients' motivation, readiness for change, or self-efficacy, which may also impact follow-up with specialty care.

Despite these limitations, the results of this study provide new information regarding the interest in, and utilization of, behavioral medicine counseling services in a large sample of primary care patients. Data in the follow-up survey suggest that even though interest was high and the sample was experienced in mental health services, utilization of services was low in comparison to reported interest 1 year prior at survey 1. The finding that interest in treatment is the greatest predictor of utilization over a 1-year period suggests that patients who are interested in treatments may benefit from additional resources to connect them with those treatments. Even a simple inventory of interest, such as the one used in this study and administered in the primary care setting may help identify patients interested in receiving behavioral care and connect patients to the counseling resources they desire. Furthermore, using this inventory to connect with other services in the medical center would reduce another barrier (i.e., not knowing where to find services). The use of risk identifying and linking programs in primary care has been shown to be associated with higher rates of healthy behaviors [31].

Finally, overcoming barriers to cost is highly important, particularly in countries such as the USA, that do not have universal insurance coverage. As demonstrated by the study by Krist and colleagues [30], when even a modest cost was applied for smoking and obesity counseling interventions, enrollment from a primary care population plummeted. Therefore, improving insurance coverage for these services and increasing the availability of cost-effective interventions such as e-health interventions have a great potential to improve health outcomes and quality of life. E-health interventions have been shown to be effective in counseling for multiple psychological and behavioral conditions including anxiety and depression, weight loss, and smoking cessation [32–35]. Innovations in the identification of patient need and systems to improve referral to counseling treatments are important next steps to improve access to care for psychological and behavioral medicine counseling [36].

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