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Personal characteristics and depression-related attitudes of older adults and participation in stages of implementation of a multi-site effectiveness trial (PRISM-E)

Marsha N. Wittink^{1,*}, David Oslin^{2,4}, Kathryn A. Knott², James C. Coyne^{1,2}, Joseph J. Gallo^{1,2}, and Cynthia Zubritsky³

¹Department of Family Practice and Community Medicine, School of Medicine, University of Pennsylvania, PA, USA

²Department of Psychiatry, School of Medicine, University of Pennsylvania, PA, USA

³Center for Mental Health Policy and Research, School of Medicine, University of Pennsylvania, PA, USA

⁴Philadelphia VAMC and the VISN 4 Mental Illness, Research, Education, and Clinical Center, Philadelphia, PA, USA

SUMMARY

Background—No study has assessed attitudes about depression and its treatment and participation at each step of recruitment and implementation of an effectiveness trial. Our purpose was to determine the association between personal characteristics and attitudes of older adults about depression with participation at each step of the Primary Care Research in Substance Abuse and Mental Health for the Elderly (PRISM-E) treatment effectiveness trial.

Methods—Information on personal characteristics and attitudes regarding depression and its treatment were obtained from all potential participants in PRISM-E.

Results—Persons who reported better social support were more likely to complete a baseline interview, but were less likely to meet with the mental health professional carrying out the intervention. Attitudes about taking medicines were significantly associated with uptake of the intervention, but not with earlier phases of recruitment. Persons were much more likely to have a visit with the mental health professional for treatment of depression if they were willing to take medicine for depression but did not endorse waiting for the depression to get better [odds ratio (OR) = 3.16, 95% confidence interval (CI) = 1.48–6.75], working it out on one's own (OR = 5.18, 95% CI = 1.69–15.85), or talking to a minister, priest, or rabbi (OR = 2.01, 95% CI = 1.02–3.96).

Conclusion—Social support and other personal characteristics may be the most appropriate for tailoring recruitment strategies, but later steps in the recruitment and implementation may require more attention to specific attitudes towards antidepressant medications.

Keywords

aged; depression; health knowledge; attitudes; practice; patient participation; primary health care

INTRODUCTION

Recruiting a representative sample of patients who participate in research is critical for the design of trials and for the inference we make about the results of effectiveness trials. Although researchers have reported the difficulty in recruiting and retaining older adults in antidepressant trials (e.g. Stevens *et al.*, 1999), few studies have assessed the association of non-participation with personal characteristics and attitudes about depression and its treatment. In large primary care depression trials like PROSPECT (Bruce *et al.*, 2004), IMPACT (Unützer *et al.*, 2002) and PRISM-E (Levkoff *et al.*, 2004) that have focused on older adults, many eligible patients were not screened. Understanding the patient factors associated with participation at each step of trial implementation (screening, assessment for eligibility, randomization, and enrollment) can assist in tailoring strategies to individuals who otherwise may be less inclined to participate. For example, devoting resources to assess patient attitudes about disease early on in the recruitment process may be unnecessarily costly if attitudes about treatment only emerge as influential in later steps of the recruitment process. Previous studies of patient participation have focused on trials for the treatment of cancer (Ganz, 1990; Gotay, 1991; Ellis, 2000), Alzheimer's disease (Mastwyk *et al.*, 2003), and cardiovascular disease (Lloyd-Williams *et al.*, 2003; Peterson *et al.*, 2004) but have not described personal characteristics or attitudes associated with each step in trial implementation.

Our investigation differs in several ways from other studies of the characteristics of patients in clinical trials because we focus on several personal characteristics as well as depression-specific attitudes within a large sample of older primary care patients. In addition, we compared the characteristics of participants to non-participants at every step of implementation of a depression intervention trial. These steps begin prior to screening for depression, through to completion of a diagnostic baseline interview, agreeing to randomization and meeting with a mental health professional in the intervention. Understanding how personal characteristics and attitudes about depression and its treatment might be associated with participation may assist with inference from the trial and can help with planning future trials.

That beliefs influence participation and need to be considered in the design of intervention studies is consistent with studies suggesting that elements of a personal explanatory model for a disease are associated with engagement in and subsequent adherence to medical treatment. For example, attitudes about treatment were better predictors of self-management of diabetes than were perceived barriers to adherence (Skinner and Hampson, 2001). Brown and colleagues looked at the relationship between illness perceptions and adherence and depression self-management in a small, young sample from a primary care setting, finding that personal explanatory models of depression were associated with current and past treatment seeking, medication adherence, and coping strategies (Brown *et al.*, 2001). In an analysis of a sample that included few older adults, patients who had been seen solely in the primary care setting for mental health services, compared to patients who reported seeking care in the mental health specialty sector, were more likely to find various forms of treatment not acceptable and were more likely to believe that they should 'get over' their depression without treatment (Van Voorhees *et al.*, 2003). These studies did not focus on older adults and refer to treatment seeking, not research participation. We know of no study that has assessed attitudes or preferences in relation to participation at each step of recruitment and implementation of an effectiveness trial.

Our conceptual framework encompassed sociodemographic characteristics, social factors such as living situation and perceived social support, and physical and mental health as enabling and predisposing factors related to participation (Brown and Topcu, 2003). We hypothesized that patients who agreed to participate in the study at each stage of the study (screening, completing baseline assessment, agreeing to randomization and meeting with a mental health

professional) would differ from those who declined to participate at each stage based on characteristics in our conceptual framework. Other work on clinical trials led us to suspect that older persons and persons who self-identify with an ethnic minority group would be less likely to participate at every phase of the trial (Rimer *et al.*, 1996; Gallagher *et al.*, 1997; Shavers-Hornaday *et al.*, 1997; Sateren *et al.*, 2002; Advani *et al.*, 2003; Corbie-Smith *et al.*, 2003). With regard to depression-related attitudes, consistent with prior work (Cooper *et al.*, 2003; Bogner *et al.*, in press; Gallo *et al.*, in press), we hypothesized that patients who agreed with a statement that depression should be treated with medication would be more likely to participate in recruitment and to remain in the depression treatment trial than patients who did not endorse taking medicines. We were particularly interested in whether some factors operated to influence participation throughout each phase of implementation or whether some factors were more salient earlier or later in the process.

METHODS

The PRISM-E Study

The Primary Care Research in Substance Abuse and Mental Health for the Elderly (PRISM-E) Study was a multi-site effectiveness trial designed to assess the use of a mental health (MH) specialist co-located in primary care to enhance treatment (the 'integrated care' model) and of direct referral to specialty care (the 'referral' model) for older adults with depression, anxiety, or alcohol use problems. In the PRISM-E study, all patients aged 65 years and older were initially seen by their primary care provider (PCP) or referred to the study by their PCP, and those eligible for the study were subsequently randomized to treatment in one of the two models. The integrated model consisted of the co-location of MH/SA specialists and services within primary care practices so that PCPs could play a more active role in treatment. The referral model encompassed referral to a separate mental health or substance abuse specialty clinic. Methods for the multi-site trial are described in detail elsewhere (Bartels *et al.*, 2002; Gallo *et al.*, 2004; Levkoff *et al.*, 2004).

Study sample

This investigation was conducted as a site-specific component of the larger multi-site study. Between March 2001 and August 2002, all patients aged 65 years and older who had an appointment with one of 34 primary care clinicians (23 in the VA and 11 in non-VA community practices) were eligible for participation. Each week during the study, a random subset of patients was selected from each practice's appointment list. Primary care clinicians could request that screening not be conducted on patients known to be terminally ill, severely cognitively impaired or who clinicians felt could not participate in the screening. The remaining patients were sent a letter from their physician describing the screening procedures to be used to identify those with mental health disorders. Patients were asked to return a form if they did not wish to be contacted for telephone screening. Approximately one week before the scheduled medical appointment, those who had not declined participation were contacted by the research staff, via telephone, to screen for depression, anxiety, and at-risk alcohol use and to assess several depression related attitudes. As the attitudes data collected for this current study were only obtained for a limited time and at only two of the sites (the Philadelphia VAMC and the University of Pennsylvania), the sample should not be considered representative of the entire multi-site study. These two sites were the only sites in PRISM-E to collect data on depression attitudes at the time of the screening interview.

Measurement strategy

Upon reaching the patient by telephone, consent was obtained in accordance with both the Philadelphia VAMC and University of Pennsylvania Institutional Review Board regulations. The initial screening assessment included demographic questions and employed several

assessment instruments commonly employed in community and primary care studies including the 12-item version of the General Health Questionnaire (GHQ; Goldberg and Hillier, 1979; Samuels *et al.*, 1994; Bogner *et al.*, 2002), the Brief Orientation Memory Concentration test (BOMC; Blessed *et al.*, 1968), two screening questions for suicidal ideation modified from the PRIME-MD (Spitzer, 1994), and a single item rating general health from the MOS SF-36 (Ware and Sherbourne, 1992). Participants were asked a single question to assess social support: 'On the whole, how much do your friends and relatives make you feel loved and cared for?' This item was developed from a group of highly intercorrelated items in Lawton and colleagues' research on the emotional experience of older adults and quality of contact with family and friends (Lawton *et al.*, 1999). This single item was selected for use as part of the screening battery to reduce respondent burden. Persons with a BOMC of 16 or less and not in current MH treatment, who scored greater than 2 on the GHQ were invited to receive further evaluation of their psychiatric symptoms and diagnoses in accordance with the PRISM-E multi-site protocol (Levkoff *et al.*, 2004).

The multi-site trial focused on depression, anxiety, or alcohol problems. In this investigation we focused only on persons who scored above the threshold on the GHQ and who met criteria for a depression diagnosis (major depression, minor depression, dysthymia, or depression NOS; Levkoff *et al.*, 2004). Because the organization of health services differs in VA sites compared to non-VA sites, we considered whether the practice from which the patient was recruited was a VA or non-VA site.

During screening, all participants were asked to respond to questions regarding attitudes about depression and its treatment. Specifically, patients were asked to respond to the statement, 'I believe depression is a medical problem' with response categories 'strongly agree', 'agree', 'don't know', 'disagree', or 'strongly disagree'. This query was followed by asking a series of questions about management of depression with the following strategies: (a) wait for it to get better; (b) try to work it out on my own; (c) see my pastor, rabbi, or priest; (d) talk to my primary care physician; or (e) take medications. Participants provided a 'yes' or 'no' response to each possible management strategy and could endorse as many items as they wished. The desire to describe the sample with regard to personal characteristics and attitudes had to be balanced with the need to keep the screening interview short.

Analytic strategy

The analytic plan proceeded in two phases. In the first phase, we made comparisons corresponding to each of the following steps at which a potential participant could refuse to proceed further: screening, baseline diagnostic interviewing, randomization, and attending a first visit with the mental health professional. After the screening step, our sample was restricted to persons who scored above the threshold on the GHQ. Comparisons between groups of participants were made using χ^2 tests or *t*-tests as appropriate for categorical or continuous data, respectively. We set α at 0.05 to denote statistical significance, recognizing that tests of statistical significance are approximations that serve as aids to interpretation and inference. Unadjusted *p*-values allow the reader to carry out their own adjustment for multiple comparisons; however, because we examine characteristics and attitudes that might be associated with participation at several steps in recruitment and implementation of an effectiveness trial, we provide both unadjusted *p*-values and *p*-values adjusted for the three comparisons we make at each of three steps of recruitment by multiplying the *p*-value by 3 (the method of Bonferroni; Oakes, 1990; Perneger, 1998). The second phase consisted of carrying out multivariate analyses to examine the characteristics of the persons who agreed to participate at each stage of recruitment. Based on bivariate associations with our dependent variable, participation at each step of recruitment and treatment participation, we included covariates in multivariate models that we found were associated at the $p < 0.20$ level. For

models in which having met with the health specialist was the dependent variable, we have included a term representing whether the participant was randomized to integrated behavioral health care versus enhanced referral care because persons who were randomized to the integrated care condition have been reported to be more likely to engage the health specialist (Bartels *et al.*, 2004). Our measure of association was the odds ratio (Hosmer and Lemeshow, 2000). Covariates were removed from further models if the value of the likelihood ratio test had a p -value > 0.05 .

In summary, we calculated descriptive statistics for the participants who agreed and who did not agree to participate at each step of study implementation and performed logistic regression for tests of association at each of these stages. This sequence of logistic regression models is equivalent to continuation ratio logistic regression, which is the discrete time version of the Cox model with the relaxation of the proportional hazards assumption (Agresti, 2002). This discrete time survival analysis allowed us to assess the relationship of characteristics in our conceptual model in relation to each study step. In order to better assess the relationship between underlying attitudes about depression and participation, we carried out *post hoc* analyses that combined attitude items two at a time that might signify an underlying patient perspective that might be highly predictive of participation in the trial. Data analysis was performed using SPSS version 12.

RESULTS

Sample characteristics

Figure 1 illustrates the stages of recruitment involved in this study and the number of persons participating at each step. In total, 8423 people were asked to provide information for possible participation in the study. In all, 1222 persons mailed a form stating they did not want to participate, 1340 persons were unable to be contacted, and 1858 did not provide a screening interview (because the primary care doctor thought the patient should not be screened ($n = 400$), the patient or a family member refused ($n = 872$), the patient was terminally ill or otherwise too ill to participate (269), the patient was cognitively impaired ($n = 121$), or for other reasons ($n = 196$)). Of 4003 persons who were screened, 768 were found to have a GHQ score above the threshold for psychosocial distress. Of persons with GHQ above the threshold, 559 individuals went on to complete baseline assessments. Of those who completed a baseline assessment and met the study criteria, 224 agreed to be randomized into one of two arms of the study and 151 eventually met at least once with a mental health specialist.

Participation in screening interview

We compared the age and gender of the 4420 persons who were not assessed to the 4003 persons who did participate (only age, gender and practice site were available at this step). The proportion of women who participated in the screening interview ($n = 1219$, 30.5%) did not differ substantially from the proportion of women among persons who did not participate ($n = 1362$, 30.8%; $p = 0.73$). The mean age of those completing the screening questionnaire was 74.4 years ($SD = 5.9$ years) as compared with 75.8 years ($SD = 6.7$ years; $p < 0.001$). With regard to types of the practices from which patients were recruited (VA vs non-VA), persons who were recruited from VA sites were more likely to participate in the screener (52.3% vs 49.9%; $p = 0.02$). In multivariate analysis models that included terms for age, gender and type of hospital practice, both age and VA practice site remained independent predictors of participation in the screening interview.

Participation in diagnostic interview

Column A of Table 1 consists of persons whose GHQ score was above the threshold for psychological distress and who were eligible for baseline diagnostic assessment interview. No

significant differences were found between participants who completed the baseline interview and those who did not in terms of age, gender, ethnicity or marital status. However, significant differences were found with regard to practice site, self-rating of global health, social support, and cognitive impairment. Persons recruited from VA sites were less likely to complete a baseline diagnostic assessment, but this barely failed to reach conventional levels of statistical significance ($p = 0.05$; adjusted $p = 0.15$). In terms of patient characteristics, patients who rated their health as good, very good or excellent were more likely to complete the baseline diagnostic interview as compared with patients who rated their health as fair or poor ($p = 0.01$; adjusted p -value = 0.03). Persons who reported they had a great deal or quite a bit of social support were more likely to complete the baseline interview than were those who responded: 'some'; 'a little' or 'not at all' ($p = 0.03$; adjusted p -value = 0.09). The mean BOMC score was also found to be indicative of more cognitive impairment among those who did not complete the baseline interview (mean score 5.5) compared to persons who completed the baseline interview (mean score 4.4; $p = 0.01$; adjusted p -value 0.03).

In multivariate models that included terms for general health rating and social support, cognition, practice site (VA vs non-VA), endorsement of the statement 'if depressed I would work it out on my own' and endorsement of the statement 'if depressed I would take a medication', both social support and cognition remained independently associated with participation in the diagnostic interview. Specifically, persons who reported their social support was good were 1.48 times as likely to participate in the diagnostic interview (95% CI = 1.03–2.12). With respect to cognition, for every 1 point increase on the BOMC (indicating more cognitive impairment) there was a 6% decline in odds of participation (OR = 0.94, 95% CI = 0.89–0.98).

Participation in randomization to the effectiveness trial

Column B of Table 1 compares individuals who agreed to be randomized into the PRISM-E intervention study and persons who did not. Once again there were no significant differences found between these groups with respect to age, sex, ethnicity, marital status or living situation. No significant differences were found in attitudes to depression and its treatment among persons who agreed to be randomized and persons who did not; however, the number of persons ($n = 19$) who met criteria for the study but refused to be randomized was small.

Participation in meeting with the mental health professional

This set of results concerns the engagement of the patient with the mental health professional; namely, whether at least one visit occurred (column C of Table 1). At this level of participation, the role of the condition to which the patient was randomized (the referral versus the integration care model) could be evaluated. Randomization to the integrated care model was found to be significantly associated with participation in a meeting with a mental health specialist ($p < 0.001$; adjusted p -value $p = 0.003$). In contrast to the analysis for completing a baseline diagnostic interview, persons who were recruited from VA sites were more likely to engage the mental health professional in treatment ($p = 0.01$; adjusted p -value = 0.03). Also in contrast to the baseline interview stage, persons who met with the mental health specialist tended to report less social support ($p = 0.01$, adjusted p -value = 0.03). Proportionately fewer women than men engaged the mental health specialist ($p = 0.04$; adjusted p -value = 0.12). Having made a visit with the mental health professional was associated with willingness to take medications for depression ($p = 0.04$; adjusted p -value = 0.16). No other significant differences were seen between the characteristics or attitudes of those who attended one meeting with the mental health professional and those who did not.

In multivariate models that included terms for gender, social support, depression related attitudes, practice site (VA vs non-VA) and intervention condition (referral vs integration care

model), integrated care intervention condition (OR = 7.15, 95% CI = 3.52–14.52) and good social support (OR = 0.45, 95% CI = 0.20–0.98) remained statistically significant.

Attitudes about depression and its treatment: combining attitudes in analyses

Because we hypothesized that willingness to take medications signaled increased willingness to participate in treatment, we examined endorsement of medication to treat depression in combination with the four other items, reasoning that endorsement of medications to treat depression in the face of not endorsing another item, such as working it out on one's own or talking to a minister, priest, or rabbi, might signal a particularly strong underlying preference for medical treatment. We found that persons who endorsed taking medication for depression without other modalities, were more likely to engage with the mental health professional (Table 2), but were no more likely to complete a baseline interview.

DISCUSSION

Our study suggests that patients who participate in a depression study may differ from those who do not in several ways, and the relationship of patient characteristics and attitudes to participation depends on the stage of recruitment and implementation. In our study, personal characteristics such as ratings of health appeared to be associated with participation at earlier steps in recruitment, but attitudes related to treatment only appeared to play a role later with regard to who actually met with the mental health professional. Some factors such as whether the patient was recruited from a VA site or reported good social support reversed the direction of their association between completion of the baseline interview to meeting with the mental health professional. Perception of good social support in particular was associated with an increased likelihood of participation in the baseline interview but was inversely associated with engagement with a mental health professional. Living alone was not associated with participation at any level suggesting that the *perception* of social support was crucial. Persons who endorsed taking medications were more likely to have met with the mental health professional.

Before discussing the implications of our study, several limitations deserve comment. The sample was derived in part from practices affiliated with the VA and tended to have more men than would be expected given the distribution of depression according to gender (Bogner and Gallo, 2004). We were constrained in the detail with which we could describe the sample with the need to keep the screening interview short. We believe the disadvantage of employing single questions with face validity to assess general health, social support, and attitudes was offset by having information on the sample at early steps in the recruitment and implementation process. With regard to measuring attitudes, we used a survey method that forced patients to agree or to disagree with specific statements that have face validity for assessing preferences. Using longer questionnaires or allowing respondents to express their attitudes in their own words may have led to further insights into the determinants of participation at different phases of recruitment and implementation but would not have been feasible. Furthermore, we did not assess health attitudes at several points in time in order to account for any change in attitudes about depression, especially as patients gain experience with the treatment or become more informed. We did not specifically ask patients why they did or did not participate in the various stages of recruitment and implementation of the trial. The health attitudes we assessed were only coarse indicators of attitudes, preferences, and beliefs.

Drawing generalizations from the medical literature about the characteristics of persons who have participated in research is a difficult task because the factors related to participation in a survey, an observational cohort study, or in an intervention trial may be quite different. In addition, factors related to participation in a clinical trial for a patient with cancer may differ from participation in a trial involving a mental health or substance abuse diagnosis.

Investigators reporting the results of randomized controlled clinical trials published in four high-impact medical journals did not commonly provide the numbers of potential or eligible participants who did not take part in the trial (Gross *et al.*, 2002), let alone provide descriptions of the personal characteristics and attitudes associated with participation at each phase of implementation from screening, to determination of eligibility for the study, and recruitment into the trial, as we have done here.

Many prior descriptions of study participants have focused on the influence of age, gender, and ethnicity on participation in clinical research (Norton *et al.*, 1994; Rimer *et al.*, 1996; Gallagher *et al.*, 1997; Sateren *et al.*, 2002; Advani *et al.*, 2003; Corbie-Smith *et al.*, 2003; Lloyd-Williams *et al.*, 2003; Peterson *et al.*, 2004). With regard to primary care depression trials involving primarily older adults, women and older persons were more likely than others to participate in the screening and enrollment phases of the NIMH Prevention of Suicide in Primary Care Elderly—Collaborative Trial (PROSPECT; Bruce and Pearson, 1999).

Beliefs about illness and its treatment can play a role in decisions about accepting treatment or participating in a research study. Sirey *et al.* (1999) studied attitudes about stigma among people seeking depression treatment and found that greater perceived stigma toward individuals with mental illness predicted early treatment discontinuation in elderly patients with major depression. Brown and colleagues have suggested that a patient's health attitudes may impact upon treatment decisions with regard to depression (Brown *et al.*, 2000). Work by Pyne *et al.* (in press) suggests that patient treatment attitudes may have an effect on the cost-effectiveness of healthcare interventions. In particular, a primary care intervention was found to be cost-effective only for patients who were receptive to depression treatment. The decision to participate in a study may involve considering treatment options that are not consistent with one's attitudes about the causes and management of depression. We were limited in our ability to study the role of personal characteristics and attitudes on willingness to participate in the randomization step. Apparently, once a potential participant agreed to complete a screening questionnaire and baseline interview, they were willing to participate in the trial. Previous studies that have explored the reasons that eligible patients refuse participation in a randomized trial did not include earlier phases before randomization (Gotay, 1991). Thus the lack of drop-out noted in our study at the randomization phase may have been because patients declined participation at earlier phases. Of note, however, patients who were randomized were more likely to have met the mental health professional if they were randomized to the integrated care condition. In other words, patients accepted randomization, but only carried through with the study if they were assigned to the care model of their choice. To our knowledge no studies have looked specifically at attitudes associated with the participation of older adults in depression trials carried out in primary health care.

Our findings that persons who endorsed medication to treat depression appear to be more likely to see the mental health specialist in the final phase of recruitment must be interpreted with caution; nevertheless, because there have been so few studies that have addressed whether attitudes might play a role in participation in studies of mental health interventions among older persons, we believe the finding deserves some attention and is worthy of further study. We surmise that endorsement of willingness to take medication for depression in the face of not endorsing other modalities, such as waiting for the depression to get better, provided a strong signal that the patient endorsed a concept of depression that would be consistent with the kind of treatment that was being offered in the trial (medication and psychotherapy). Thus, the notion that depression is best managed with medication and not other modalities only emerges as a predictor of participation at the stage when treatment was being offered—meeting with the mental health professional—and not at earlier phases of recruitment. Our study supports the idea that extensive costs expended on assessing and addressing attitudes about treatment are not necessary early on in the recruitment process, but are best called into play closer to the

randomization process. However, the finding that social support appears to play a role in both the early and later phases of recruitment suggests that more attention might need to be paid to certain personal characteristics. Based on our results it seems as though patients with good perceived social support are more likely to participate in screening but less likely to actually see a mental health provider. This seems to suggest that while screening and agreeing to be in a research study of depression is associated with good social support, once the intervention is offered the patient may not feel they need an intervention given the sense of good social support.

Understanding how personal characteristics and beliefs of patients influence participation at every step of intervention trial recruitment and implementation thus seem critical if we wish to be able to make conclusions about depression from effectiveness trials that can be generalized. Our study suggests that the difficulty with recruitment may be in part related to patients' attitudes regarding depression as an illness and patient ideas about appropriate treatment. Our results imply that resources might be deployed to improve participation in ways that emphasize assessment of patient characteristics and tailoring that differs according to the phase of the study. Sociodemographic characteristics such as ethnicity may be the most appropriate for tailoring recruitment strategies, but later steps in the recruitment trial, such as when treatment is being offered, may require more attention to specific attitudes the potential participant harbors about depression and its treatment.

KEY POINTS

- The relationship of attitudes to participation depends on the stage of recruitment and implementation. Specifically, attitudes with regard to depression appear to play a greater role in who actually engages with the mental health professional than with participation in earlier phases of the study.
- With regard to patient characteristics, social support, self-rated general health, and cognitive function affected participation at different steps of recruitment and implementation of the trial.
- Generalizations drawn from effectiveness trials should take into account the personal characteristics and attitudes of the persons who have participated in the trial.
- Our results imply that resources might be deployed to improve participation in ways that emphasize assessment of patient characteristics and tailoring that differs according to the phase of the study.

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GHQ = General Health Questionnaire.

Figure 1.

Number of persons participating in PRISM-E at each step of recruitment and follow-through. Details about persons who did not provide a screening interview are provided in the text. The boxes in the lower part of the figure (labeled A, B, and C) refer to the comparisons in Table 1

Table 1

Comparison of characteristics of older patients who participated and who declined to participate at each stage of recruitment. Characteristics of persons who completed the screening questions are described in the text (data not shown in the table). Data from the Primary Care Research in Substance Abuse and Mental Health for the Elderly (PRISM-E) Study (2001–2002), Philadelphia sites

	A Completed baseline diagnostic interview		B Met study criteria and randomized into study		C Engaged with mental health professional	
	yes (n = 559)	no (n = 209)	yes (n = 224)	no (n = 19)	yes (n = 151)	no (n = 73)
Practice site (reference non-VA site)						
VA	304 (54.4%) $\chi^2 = 3.78$, df = 1, $p = 0.05$	120 (62.2%)	125 (55.8%) $\chi^2 = 0.39$, df = 1, $p = 0.54$	12 (63.2%)	93 (61.6%) $\chi^2 = 6.29$, df = 1, $p = 0.01$	32 (43.6%)
Age						
65 to 74 years	281 (50.3%)	93 (44.5%)	115 (51.3%)	7 (36.8%)	79 (52.3%)	36 (49.3%)
75 to 84 years	243 (43.5%)	104 (49.8%)	87 (38.8%)	11 (57.9%)	58 (38.4%)	29 (39.7%)
85 years and older	35 (6.3%)	12 (5.7%)	22 (9.8%)	1 (5.3%)	14 (9.3%)	8 (11.0%)
	$\chi^2 = 2.44$, df = 2, $p = 0.30$		$\chi^2 = 2.70$, df = 2, $p = 0.26$		$\chi^2 = 0.25$, df = 2, $p = 0.88$	
Gender						
Women	175 (28.2%)	59 (31.4%)	66 (29.6%)	4 (21.1%)	38 (25.2%)	28 (38.9%)
	$\chi^2 = 0.70$, df = 1, $p = 0.40$		$\chi^2 = 0.62$, df = 1, $p = 0.43$		$\chi^2 = 4.41$, df = 1, $p = 0.04$	
Ethnicity						
African American	149 (26.7%)	66 (31.6%)	65 (29.0%)	6 (31.6%)	45 (29.8%)	20 (27.4%)
	$\chi^2 = 2.06$, df = 2, $p = 0.36$		$\chi^2 = 3.12$, df = 2, $p = 0.21$		$\chi^2 = 0.82$, df = 2, $p = 0.67$	
Marital status						
Married/have partner	287 (51.4%)	98 (47.1%)	113 (50.0%)	12 (63.2%)	77 (51.3%)	36 (49.3%)
Separated/divorced/widowed	241 (43.2%)	93 (44.7%)	106 (45.7%)	6 (31.6%)	68 (45.3%)	32 (43.8%)
Never married	30 (5.4%)	17 (8.2%)	10 (4.3%)	1 (5.3%)	5 (3.3%)	5 (6.8%)
	$\chi^2 = 2.57$, df = 2, $p = 0.28$		$\chi^2 = 1.26$, df = 2, $p = 0.53$		$\chi^2 = 1.42$, df = 2, $p = 0.49$	
Living situation						
Lives alone	175 (31.5%)	69 (33.2%)	70 (31.4%)	6 (35.3%)	47 (31.3%)	23 (31.5%)
	$\chi^2 = 0.19$, df = 1, $p = 0.67$		$\chi^2 = 0.11$, df = 1, $p = 0.74$		$\chi^2 = 0.01$, df = 1, $p = 0.98$	
Global health rating						
Health rated as excellent, very good, or good	241 (43.7%)	69 (33.5%)	77 (34.8%)	6 (31.6%)	53 (35.6%)	24 (33.3%)
	$\chi^2 = 6.41$, df = 1, $p = 0.01$		$\chi^2 = 0.08$, df = 1, $p = 0.77$		$\chi^2 = 0.11$, df = 1, $p = 0.74$	
Social support						
Rating of quite a bit or a great deal of support	407 (74.2%)	134 (66.3%)	152 (70.0%)	12 (66.7%)	94 (64.4%)	58 (81.7%)
	$\chi^2 = 4.96$, df = 1, $p = 0.03$		$\chi^2 = 0.09$, df = 1, $p = 0.76$		$\chi^2 = 6.82$, df = 1, $p = 0.01$	
Attitudes about depression and its treatment						
Agrees that depression is a medical problem	382 (70.6%)	131 (67.5%)	151 (69.9%)	13 (68.4%)	100 (69.0%)	51 (71.8%)
	$\chi^2 = 0.67$, df = 2, $p = 0.71$		$\chi^2 = 0.03$, df = 2, $p = 0.98$		$\chi^2 = 0.25$, df = 2, $p = 0.88$	
If depressed would ...						
... wait to get better	197 (36.2%)	66 (32.4%)	84 (38.7%)	6 (31.6%)	54 (37.2%)	30 (41.7%)
	$\chi^2 = 0.97$, df = 1, $p = 0.33$		$\chi^2 = 0.38$, df = 1, $p = 0.54$		$\chi^2 = 0.40$, df = 1, $p = 0.53$	
... work it out on own	364 (66.9%)	122 (59.8%)	148 (68.2%)	11 (57.9%)	96 (66.2%)	52 (72.2%)
	$\chi^2 = 3.29$, df = 1, $p = 0.07$		$\chi^2 = 0.84$, df = 1, $p = 0.36$		$\chi^2 = 0.80$, df = 1, $p = 0.37$	
... talk to pastor, rabbi, priest	162 (29.8%)	68 (33.3%)	62 (28.6%)	6 (31.6%)	42 (29.0%)	20 (27.8%)
	$\chi^2 = 0.89$, df = 1, $p = 0.35$		$\chi^2 = 0.08$, df = 1, $p = 0.78$		$\chi^2 = 0.03$, df = 1, $p = 0.86$	
... talk to primary care doctor	402 (73.9%)	158 (77.5%)	154 (71.0%)	17 (89.5%)	104 (71.7%)	50 (69.4%)
	$\chi^2 = 1.00$, df = 1, $p = 0.32$		$\chi^2 = 3.00$, df = 1, $p = 0.08$		$\chi^2_{0.12}$, df = 1, $p = 0.73$	
... take medication	357 (65.6%)	144 (70.6%)	141 (65.0%)	16 (34.8%)	101 (69.7%)	40 (55.6%)
	$\chi^2 = 1.65$, df = 1, $p = 0.20$		$\chi^2 = 2.90$, df = 1, $p = 0.09$		$\chi^2 = 4.20$, df = 1, $p = 0.04$	
Cognition						
Mean BOMC (SD)	4.4 (SD = 4.0)	5.5 (SD = 4.1)	4.4 (4.0)	3.7 (4.0)	4.6 (SD = 4.1)	4.0 (SD = 3.8)

	A Completed baseline diagnostic interview		B Met study criteria and randomized into study		C Engaged with mental health professional	
	yes (n = 559)	no (n = 209)	yes (n = 224)	no (n = 19)	yes (n = 151)	no (n = 73)
Depression	<i>p</i> = 0.01					
Mean GHQ (SD)	5.4 (SD = 2.4)	5.2 (SD = 2.1)	6.4 (2.5)	6.8 (2.6)	6.6 (SD = 2.6)	6.0 (SD = 2.1)
	<i>p</i> = 0.28					
			<i>p</i> = 0.52		<i>p</i> = 0.30	
					<i>p</i> = 0.08	

Percents in parentheses refer to column percents. BOMC=Blessed Orientation-Memory-Concentration Test; GHQ=General Health Questionnaire.

Table 2

Association of preferences for treatment and report of a visit with the mental health professional. Entries in the table represent odds ratios (with 95% confidence intervals in brackets). Data from the Primary Care Research in Substance Abuse and Mental Health for the Elderly (PRISM-E) Study (2001–2002), Philadelphia sites

	yes	yes	no	no
If you were depressed, would you take a medicine for depression?				
If you were depressed would you ...	yes	no	yes	no
... wait for it to get better?	1.50 [0.70, 3.20]	3.16 [1.48, 6.75]	1.89 [0.69, 5.16]	1.0
... work it out on your own?	2.15 [0.85, 5.40]	5.18 [1.69, 15.85]	1.80 [0.67, 4.84]	1.0
... talk to minister, priest, or rabbi?	1.70 [0.77, 3.73]	2.01 [1.02, 3.96]	1.20 [0.35, 4.08]	1.0