ICELANDIC PRIMARY CARE PHYSICIANS’ PERCEIVED COMPETENCE IN DETECTION AND TREATMENT OF BEHAVIOR DISORDERS

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ABSTRACT

William H. O’Brien, Advisor

While mental disorders are prevalent in primary health care settings, they often go undetected and untreated. There are no records to be found on studies of the effectiveness of Icelandic primary care physicians in diagnosing and treating mental illness. However, it is likely that the Icelandic primary health care system is not significantly different from systems in other countries that show poor detection and treatment of mental illness. The present study is the first study aimed at evaluating Icelandic primary care physicians’ experience with mental health problems and perceived competence in detection and treatment of behavior disorders. Furthermore, it is the first empirical attempt to assess the need for improved primary mental health care in Iceland. This exploratory study was designed to assess primary care physician’s perception of: 1) Prevalence and significance of different behavior disorders in the primary health care clinics, 2) their ability to detect and treat behavior disorders within the primary health care system, 3) the physician’s access to mental health services as well as quality of communication with mental health professionals, and 4) barriers to adequate mental health care within the Icelandic primary health care system. Main results suggest that Icelandic primary care physicians correctly identify that they, among all health care workers, are the ones seeing the highest proportion of people in the community suffering from mental health problems. They also correctly identify that depression and anxiety are the most prevalent groups of behavior disorders in primary care. However, while they seem to be quite confident in their ability to treat and detect mental illness, extensive amount of research from around the world show extremely poor
detection and treatment of behavior disorders in primary care. Most Icelandic primary care physicians view the detection and treatment of mental illness in their clinic as adequate or good. However, most agree that limited time with patients and limited access to mental health professionals are factors that interfere with adequate mental health services in their clinic. Implications for mental health care in the Icelandic primary care system are discussed.
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Mean Likert scores of degree to which the physicians agreed or disagreed that the above potential barriers interfered with adequate mental health care in their clinical work
INTRODUCTION

Prevalence of Mental Illness in Primary Health Care

The point prevalence of mental disorders varies somewhat among studies, but it has been estimated that approximately 15% of outpatient medical patients have a psychiatric disorder. Additionally, approximately 30% of all primary care visits involve counseling for psychosocial stress and primary care physicians spend 23% of their time with mental health problems. The most prevalent mental disorders in primary care patient populations are depressive and anxiety disorders (Cavanaugh & Zalski, 1998). Roy-Byrne and Wagner (2004) found that up to one third of patients presenting to primary care clinics with somatic complaints had a mood or anxiety disorder. Somatoform disorders and drug and alcohol dependence or abuse are also among the most prevalent mental disorders found in primary care patient populations (Cavanaugh & Zalski, 1998).

Most epidemiological studies in primary care settings have been based on identification of mental disorders by the use of screening instruments, but others have also used clinical diagnosis by primary care professionals or by psychiatric diagnostic interview. A cross-cultural study conducted by the World Health Organization in 14 countries used three different methods of diagnosis: a short screening instrument, a detailed structured interview, and a clinical diagnosis by the primary care physician. Though the point prevalence of mental disorders across the sites varied considerably, the results clearly demonstrated that a substantial proportion (about 24%) of all patients in these settings had a mental disorder (World Health Organization, 2001). Other studies conducted in various countries have confirmed high prevalence of mental disorders in the primary care health settings (e.g., Anssea et al., 2004; Pini, Perkonig, Tansella, & Wittchen, 1999; Szadoczky, Rihmer, Papp, & Furedi, 1997).
When both threshold and subthreshold mental disorders are included, the prevalence rates are substantially higher. A study on the point prevalence of mental disorders in primary care sites in Belgium, using the PRIME-MD questionnaire, found that threshold and/or subthreshold mental disorders were detected in 42.5% of all patients. In congruence with other research on prevalence of mental disorders in primary care settings, most common detected disorders were mood disorders, anxiety disorders, somatoform disorders and alcohol abuse or dependence (Pini et al., 1999).

In Iceland, no studies have been conducted on the prevalence of mental illness in the primary health care system. However, one might expect that Iceland is not an exception from, what seems to be a global reality, that mental illness in primary health care settings is highly prevalent.

_Elderly_

The elderly constitute a large proportion of the visitors to primary care physicians. However, most studies on mental illness in primary care have focused on patients who are under 65 years. Recently, studies have begun to focus more on the elderly population. In one of these studies, Olafsdottir, Marcusson and Skoog (2001) described the point prevalence of mental disorders among elderly patients in primary care settings in Sweden. The prevalence of mental disorders according to a psychiatric interview was 33%, which is a higher prevalence rate than that found in younger populations. In this study, 12% of patients had depressive disorder, and 11% had anxiety disorder. The results emphasize the importance of detecting and treating mental illness in the elderly primary care population.
Studies conducted between 1985 and 1992 found that major depression was highly prevalent among primary care patients, but estimates of prevalence ranged from 5%-20% (Barrett, Barrett, Oxman, & Gerber, 1988; Coyne, Fechner-Bates, & Schwenk, 1994; Katon, 1987; Katon & Schulberg, 1992; Kessler, Cleary, & Burke, 1985). Even the lowest estimate may still make major depression the most common condition in primary care, even exceeding common conditions such as hypertension (Katon & Schulberg, 1992). A more recent study conducted in the USA estimated the prevalence of major depression in the primary health care settings to be about 12% (McQuaid, Stein, Laffaye, & McCahill, 1999) which is within the average range of previous results. Depression causes suffering and impairment in functioning comparable to or greater than most medical illnesses (Hays, Wells, Sherbourne, Rogers, & Spritzer, 1995; Spitzer et al., 1995; Wells et al., 1989). Given the prevalence of depression in primary care and the impact it has on those who suffer from it, a greater emphasis should be placed on detecting and treating depression within this health care sector.

Estimates of the rates of minor and intermittent depression insufficient to meet criteria for current major depression range from 2% to 9% among primary care patients (Barrett et al., 1988; Ormel et al., 1990). A number of studies have demonstrated that those with subsyndromal depression have a significant degree of clinical and functional impairment, with associated socioeconomic burden upon the community (e.g., Goldney, Fisher, Dal Grande, & Taylor, 2004; Wells et al., 1989). The importance of detecting and treating subsyndromal depression has been doubted because of research showing that few treatments have shown to be effective with this disorder (Coyne, Thompson, Palmer, Kagee, & Maunsell, 2000). However, there appears to be
increasing recognition that persons with subsyndromal symptoms do have a functional disability that may respond to treatment (e.g., Judd, Schettler, & Akiskal, 2002).

Anxiety

Although believed to be one of the most common types of mental disorder in primary care, anxiety disorders have only recently begun to be recognized as more than comorbid features of depression. Studies to date show that prevalence rates of various anxiety disorders in primary health care settings are 2.8%-14.8% for generalized anxiety disorder (Didden, Philbrick, & Schorling, 2001; Leon et al., 1995; Mark Olfson et al., 1997; M. Olfson et al., 2000; Roy-Byrne & Wagner, 2004; Sartorius, Ustun, Lecrubier, & Wittchen, 1996; Wittchen, 2002), 2.2% for obsessive compulsive disorder (Leon et al., 1995), 2.1%-8.3% for panic disorder (Didden et al., 2001; Leon et al., 1995; Mark Olfson et al., 1997; M. Olfson et al., 2000; Sartorius et al., 1996; World Health Organization, 2001), 7.7% for phobias (Mark Olfson et al., 1997), and 7% for social phobia (Stein, McQuaid, Laffaye, & McCahill, 1999). Nisenson and colleagues (1998) found that the current and lifetime prevalence rates for any anxiety disorder in a primary care sample were 14.6% and 23.9%, respectively.

The prevalence of anxiety symptoms, as opposed to DSM diagnoses, has undergone limited study. Stein and colleagues (1995) interviewed 78 primary care patients without known mental illness and determined that 12.8% had subsyndromal anxiety and depression. A newly conducted study surveyed 88 primary care patients and found that 30% of participants endorsed mixed anxiety features, 33% reported generalized anxiety symptoms, nearly half acknowledged obsessive-compulsive symptoms, and nearly a quarter identified meaningful levels of worry. Seventeen percent of participants were positive on all four study measures (Sansone, Hendricks,
Gaither, & Reddington, 2004). These data suggest that anxiety symptoms are quite commonly encountered in primary care settings.

Association Between Mental and Physical Symptoms

Compared with people who do not have psychological distress, people with psychological distress experience more physical symptoms have more functional disabilities, appraise their global health status less favorably, and may have a higher prevalence of chronic diseases and use health care services at a higher rate (Von Korff, Katon, & Lin, 1990). Simon, VonKorff, Piccinelli, Fullerton, and Ormel (1999) examined the data from the World Health Organization’s study of psychological problems in general health care and found that half the depressed subjects reported multiple unexplained somatic symptoms.

A significant percentage of primary care patients with depressive disorders suffer from concurrent general medical conditions (Yates et al., 2004). One example of a physical disorder that affects and is affected by psychological functioning is diabetes. A recent meta-analysis revealed a mean prevalence of moderate to severe depression in diabetes patients to be 26% (Anderson, Freedland, Clouse, & Lustman, 2001), which is six to eight times the 3% to 4% prevalence of major depression found in the general population. Similarly, anxiety disorders have also been found to be common in patients with diabetes, and one study reported a prevalence of GAD in adults with insulin-dependent and noninsulin-dependent diabetes that was approximately six times greater than the estimated base rate of 5% in the general population. In addition, GAD was associated with poor glucose control and the reporting of hypoglycemic and hyperglycemic symptoms (Lustman, 1988). While certain sociocultural and medical factors may increase the risk of depression in diabetic patients, research is beginning to reveal that in comparison to non-depressed persons, patients with depressive symptoms or major depression
may be especially susceptible to the development of type 2 diabetes (Eaton, Armenian, Gallo, Pratt, & Ford, 1996; Everson-Rose et al., 2004; Kawakami, Takatsuka, Shimizu, & Ishibashi, 1999). Thus, rather than merely a secondary emotional response to diabetic complications, depression may be an independent risk factor for type 2 diabetes. Depressive symptoms are also associated with decreased ability to adhere to a diabetic diet and medication as well as functional impairment (Ciechanowski, Katon, & Russo, 2000; Katon, Von Korff, Lin, Unutzer, & et al., 1997).

Cardiovascular disease is also a common condition seen in primary care settings and is the leading cause of death and hospitalization in the United States (American Heart Association, 2005). Patients with depression have twofold to fourfold increased risk of developing cardiovascular disease (Ariyo et al., 2000; Ford et al., 1998; Penninx et al., 2001) and a twofold to fourfold risk of mortality after experiencing a cardiac event (Barefoot et al., 1996; Jiang et al., 2001; Kaufmann et al., 1999; Lesperance, Frasure-Smith, Talajic, & Bourassa, 2002; Penninx et al., 2001). Review articles have also concluded that symptoms of depression predict future coronary events for initially healthy individuals (Musselman, Evans, & Nemeroff, 1998; O'Connor, Gurbel, & Serebruany, 2000; Rozanski, Blumenthal, & Kaplan, 1999; Smith & Ruiz, 2002).

Another example of a common medical condition in primary care is asthma, but there have been few studies concerning the association between asthma and mental illness specifically in primary care settings. Symptoms of anxiety and depression have been associated with asthma severity, misinterpretation of asthma symptoms, inappropriate use of treatment, increased use of emergency services, and misuse of asthma medications among adult asthma clinic samples (Janson & Reed, 2000; Kolbe, Vamos, Fergusson, Elkind, & Garrett, 1996; Mancuso, Peterson,
& Charlson, 2000; Yellowlees, Alpers, Bowden, Bryant, & Ruffin, 1987). Research has also shown high prevalence of panic attacks among asthma patients (Goodwin & Eaton, 2003). A recent study on the association between asthma and mental disorders in primary care settings found that asthma was significantly related to increased likelihood of panic attack. An association was also found between asthma and increased suicide ideation; this relationship persisted in the absence of common mental disorders (Goodwin et al., 2003).

Detection and Treatment

While mental disorders are prevalent in primary health care settings, they often go undetected and untreated. Regier et al. (1993) found that most people in the community with an emotional disorder visited a general medical provider in the course of a year, and more persons with emotional disorders were treated in the primary health care system than by mental health professionals. Yet, most emotional disorders in people visiting a general medical provider were undetected and untreated. Studies have found that primary care providers do not diagnose as many as two-thirds of the cases of major depression in their clinics (Donoghue & Tylee, 1996; Perez-Stable, Miranda, Munoz, & Ying, 1990). Coyne and colleagues (1995) found that family physicians failed to detect 66.1% of cases of major depression and were less likely to detect depression in patients with milder symptoms, higher functioning, and no comorbid anxiety. Spitzer et al. (1995) found comparable rates of undiagnosed depression, with 67% of cases of major depression going undiagnosed. A similar study conducted in Italy found a somewhat higher recognition rate for depression (56%) but revealed a significantly lower recognition rate for anxiety disorders (23%) (Roy-Byrne & Wagner, 2004). Furthermore, studies have shown that even when detected by primary care physicians, emotional disorders are likely to be inadequately treated or not treated at all (Carney, Dietrich, Eliassen, Owen, & Badger, 1999; Katon &
Schulberg, 1992; Schulberg et al., 1997). A study on the prevalence and treatment utilization rates for child emotional disorders in a university-affiliated primary care clinic found that only 31% of children with current anxiety disorder and only 40% with current depressive disorder had received counseling or medication treatment during their lifetime, compared to 79% with ADHD (Chavira, Stein, Bailey, & Stein, 2004).

The high rate of undiagnosed emotional disorders in primary care may stem from several factors. Inadequate interviewing skills and experience in the management of psychosocial problems and mental disorders are two factors related to the nonrecognition of those problems (Ormel & Tiemens, 1995). Lack of time to interview patients is another barrier to accurate diagnoses (Philbrick, Connelly, & Wofford, 1996). Lipkin (1996) found that general practitioners spend an average of 12 minutes with a patient, which makes it more difficult to conduct extensive psychiatric interviews and assessments.

The expense of not diagnosing and treating mental problems in primary care health settings can be high. For example, the cost associated with depression has been estimated as high as $43.7 billion per year in the United States (Greenberg, Stiglin, Finkelstein, & Berndt, 1993). In addition, anxiety and depression are linked to the overuse of medical services, emergency department visits, hospitalizations, diagnostic and laboratory tests, pharmacy costs, and so on (Roy-Byrne & Wagner, 2004; Simon, Ormel, Von Korff, & Barlow, 1995). Thus, there is a critical need for the appropriate diagnosis and treatment of common types of mental and behavioral health problems seen in primary care settings.

There are no records to be found on studies of the effectiveness of Icelandic primary care physicians in diagnosing and treating mental illness. However, it is likely that the Icelandic
primary health care system is not significantly different from systems in other countries that show poor detection and treatment of mental illness.

The Icelandic Primary Health Care System

Iceland is a 39,770 square mile island in the North Atlantic Ocean, northwest of the British Isles. With a bit over 300,000 inhabitants in 2007, it is the most sparsely populated country in Europe, averaging about 7.5 inhabitants per square mile. The population is limited to a narrow coastal belt, valleys and lowland plains mostly in the south and south-west. In Iceland, the Minister of Health and Social Security is ultimately responsible for the administration of health services. The health services in Iceland are primarily financed by central government; 85% of financing is based on taxes but 15% is collected through fees for service. The country is divided into health care regions, each with their own primary health care centers. As defined by Iceland’s Health Services Act, primary health care refers to preventive health care measures, as well as any type of medical care performed for the benefit of the healthy and of the sick who are not in hospitals. Health care centers are provided for each designated area of the country, and all inhabitants are entitled to seek medical assistance at the health care centre or clinic most easily accessible to them at any given time. Although health care centers are located throughout the country’s coastline, the majority of the service is provided in the capital area that includes the capital city, Reykjavik, and vicinity. This area, which is a home to approximately 60% of the country’s total population, includes 18 primary health clinics. Thirty-nine additional primary health clinics are located throughout the rest of county’s highly sparsely populated area. The health care clinics offer various medical and nursing services, general medical service, general nursing care, infant or maternity service, school nursing, vaccinations for adults, health care for
the elderly, etc. The health care clinics serve the purpose of being the first choice for people when they need general medical service.

**Purpose**

Although no studies have been done on the prevalence of mental illness in the Icelandic primary health care system, there are several reasons to believe that that mental illness is highly prevalent in the country’s primary care clinics. Firstly, the primary care clinics are designed to be people’s first choice when they experience various kinds of symptoms. In addition, mental illness often manifests itself as physical symptoms, making it more likely that individuals with mental health problems seek help at the primary care clinics instead of getting direct help from mental health professionals. Furthermore, numerous studies conducted in other countries around the world; including Iceland’s neighboring countries, indicate that high prevalence of mental illness in primary care is cross-cultural. There is no reason to believe that the primary health care system in Iceland is an exception.

The present study is the first study aimed at evaluating Icelandic primary care physicians’ experience with mental health problems and perceived competence in detection and treatment of mental illness. Furthermore, it is the first empirical attempt to assess the need for improved primary mental health care in Iceland. This undertaking was exploratory in nature and was designed to assess primary care physician’s perception of: 1) prevalence and significance of different behavior disorders in the primary health care clinics, 2) their ability to detect and treat behavior disorders within the primary health care system, 3) the physician’s access to mental health services as well as quality of communication with mental health professionals, and 4) barriers to adequate mental health care within the Icelandic primary health care system.
METHOD

Participants

One hundred ninety two physicians employed at all 57 primary health care clinics in Iceland were asked to participate in this web-based survey. Based on the literature on surveys of medical professionals, difficulty in achieving a high response rate was anticipated. However, a high response rate of 59.9% was obtained, creating a sample of 115 Icelandic primary care physicians. Hence, close to 60% of all primary care physicians in Iceland participated in this study, resulting in a sample that should be highly representative of the population. The sample consisted of 91 males (79.1%) and 23 females (20%). One participant did not indicate his or her gender. Age ranged from 27 to 67 with a mean of 49 years. One participant did not indicate his or her age.

In the capital area, names and emails of currently employed primary care physicians were obtained from the Primary Health Care of the Capital Area’s website. The chief physician at each clinic in the capital area was contacted via email and asked to confirm that the list of physicians obtained was correct. Outside the capital area, offices of government health care institutions around the country were contacted and asked for names and emails of currently employed primary care physicians in the area. On several occasions, chief physician’s approval was required before the information were released.

Measures

The primary care physicians were asked to answer a questionnaire specifically developed for the present study (see appendix A). In addition to demographic questions, the questionnaire contained items that were designed to address the four main topics of this study: 1) prevalence and significance of different behavior disorders in the primary health care clinics, 2) the
physicians ability to detect and treat mental illness within the primary health care, 3) the physician’s access to mental health services as well as quality of communication with mental health professionals, and 4) barriers to adequate mental health care within the Icelandic primary health care system.

The questionnaire was developed in three main phases: 1) questions were generated by authors through relevant literature, 2) further questions were generated and existing questions were modified through consultation with independent behavioral medicine research group at Bowling Green State University and an Icelandic research group specialized in research on mental illness in primary care, and finally 3) several clinical psychology graduate students as well as a primary care physician at the BGSU Student Health Service rated the questionnaire’s interpretability and adjustments were made based on their comments.

The questionnaire was translated from English into Icelandic by the author who is fluent in both languages. The Icelandic version of the questionnaire was then rated for interpretability by several individuals that have Icelandic as their first language and adjustments were made based on their comments.

Procedure

Physicians at 57 primary health care clinics in Iceland were contacted via email, and asked to participate in the survey. The email contained short description of the study as well as instructions on how to proceed in order to participate (see appendix B). Those physicians that wished to participate were directed to a website containing the survey. The first page of the survey’s website contained consent for participation form (see appendix C). Participants indicated that they had read the consent form and agreed to participate by clicking on a link on the consent form to the questionnaire. Once a participant had completed the questionnaire, his or
her response was saved in a data file on a password-protected server. In an attempt to increase response rate, three follow up email messages were sent to the physicians at one, three and four weeks from the initial contact. To ensure confidentiality, physicians were not asked for personally identifiable information in the survey. Follow up email messages to physicians who had completed the survey were therefore unavoidable. However, in the first two follow up emails, participants were given an opportunity to reply to the email and ask not to receive further follow up emails.
RESULTS

Sample Characteristics

As noted before, this sample of 115 individuals is almost 60% of the total population of primary care physicians in Iceland. The age of participants ranged from 27 to 67 with a mean of 49 years ($SD = 8.31, n = 114$). Ninety-one (79.1%) were males and 23 (20%) were females but one participant (0.9%) did not indicate his or her gender. Sixty-three (54.8%) reported being employed at primary care clinics in the capital area and 49 (42.6%) outside the capital area but three (2.6%) did not report their work location. Table 1 depicts the average response to questions regarding the physicians’ period of employment, number of patients seen during a typical work day as well as length of time spent with patients.
Table 1

Mean, standard deviation, skewness and kurtosis for the physicians’ period of employment and their estimate of both the number of patients they see on a regular work day as well as average time spent with each patient

<table>
<thead>
<tr>
<th>Question</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many years have you been working as a primary care physician?</td>
<td>115</td>
<td>16.90</td>
<td>8.18</td>
<td>-.13</td>
<td>-.53</td>
</tr>
<tr>
<td>Approximately how many patients do you see during a typical workday?</td>
<td>111</td>
<td>16.84</td>
<td>5.52</td>
<td>1.07</td>
<td>2.09</td>
</tr>
<tr>
<td>What is your estimate of the approximate length of time you spend with each patient (in minutes)?</td>
<td>113</td>
<td>17.86</td>
<td>3.30</td>
<td>.30</td>
<td>.85</td>
</tr>
</tbody>
</table>
Prevalence of Behavior Disorders in Primary Care

Table 2 depicts the number of participants who ranked each of nine common behavior disorders as one of the four most prevalent in their clinic. The table also shows the proportion of those participants who ranked each disorder as most prevalent, second most prevalent, third most prevalent or fourth most prevalent. One hundred and ten physicians, or 95.7% of the total sample, ranked depression as one of the four most prevalent behavior disorders in their clinics. Of the 110 physicians, 61.8% ranked depression as the most common disorder. Anxiety was ranked as one of the four most common behavior disorders by 107 physicians, or 93% of the total sample. A majority of those 107 physicians (54.2%) ranked anxiety as the second most prevalent behavior disorder category in their clinic. Alcohol abuse/dependence and adjustment disorders were ranked as one of the four most prevalent disorders by 75 and 74 physicians respectively, which is about 65% of the sample. Within both of these disorder categories, about 45% of those 75 and 74 physicians, ranked the disorder category as the third most prevalent. Somatoform disorders were ranked as one of the four most prevalent disorders by 36 physicians (31.3% of the total sample) and of those 36, 41.7% ranked somatoform disorders as third most prevalent. Only 2.6-12.2% of participants ranked the other disorders, ADHD, eating disorders, bipolar disorders and conduct disorders, as one of the four most prevalent.

Taken together, majority of the physicians estimated that depression and anxiety are the most prevalent and second most prevalent groups of disorders in their clinics. A high percentage of participants also ranked alcohol abuse/dependence and adjustment disorders as prevalent, but to a lesser extent.
Table 2

Number of participants (n) who ranked nine common disorders as one of the four most prevalent in their clinic and the percentages of those participants that ranked each disorder as most prevalent (1) to least prevalent (4)

<table>
<thead>
<tr>
<th>Behavior Disorders</th>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>110</td>
<td><strong>61.8</strong></td>
<td>32.7</td>
<td>3.6</td>
<td>1.8</td>
</tr>
<tr>
<td>Anxiety</td>
<td>107</td>
<td>26.2</td>
<td><strong>54.2</strong></td>
<td>15.9</td>
<td>3.7</td>
</tr>
<tr>
<td>Alcohol abuse/dependence</td>
<td>75</td>
<td>5.3</td>
<td>8.0</td>
<td><strong>45.3</strong></td>
<td>41.3</td>
</tr>
<tr>
<td>Reaction to severe stress/adjustment</td>
<td>74</td>
<td>9.5</td>
<td>6.8</td>
<td><strong>44.6</strong></td>
<td>39.2</td>
</tr>
<tr>
<td>Somatoform</td>
<td>36</td>
<td>8.3</td>
<td>11.1</td>
<td><strong>41.7</strong></td>
<td>38.9</td>
</tr>
<tr>
<td>ADHD</td>
<td>14</td>
<td>0</td>
<td>7.1</td>
<td>35.7</td>
<td><strong>57.1</strong></td>
</tr>
<tr>
<td>Eating disorders</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>33.3</td>
<td><strong>66.7</strong></td>
</tr>
<tr>
<td>Bipolar</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>9.1</td>
<td><strong>90.9</strong></td>
</tr>
<tr>
<td>Conduct</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Note.* Participants were asked to choose four out of nine common behavior disorders in primary care and rank the four chosen from 1 (most prevalent) to 4 (least prevalent of the four).
Figure 1 shows the percentage of participants ($N = 115$) who estimated that social workers, psychologists, psychiatrists, primary care physicians or other health care professionals come into contact with the highest proportion of people suffering from behavior disorders. Out of all participants, 74.8% reported that they thought primary care physicians come into contact with most people suffering from behavior disorders while 17.4% reported that psychiatrists see the highest proportion of patients. A small percentage of physicians (i.e., 3.5, 2.6 and 1.7% respectively) reported that they thought social workers, psychologists or other health care professionals are the ones that see the highest proportion of people suffering from behavior disorders, respectively.

![Bar chart showing percentages of participants' estimations](image)

*Figure 1.* Percentages of participants who estimated that social workers, psychologists, psychiatrists, primary care physicians or other health care professionals come into contact with the highest proportion of patients suffering from behavior disorders.
Physicians’ Perceived Competence in Detection and Treatment

Mean values, standard deviation, skewness and kurtosis of Likert scores for general statements related to perceived competence in detection and treatment of behavior disorders appear in Table 3. Skewness and kurtosis values suggest a reasonably normal distribution, adequate for the purpose of this analysis.

A one-way within-subjects ANOVA was conducted on the three items related to physicians’ perceived competence. Because the assumption of sphericity was violated, $W(2) = .728, p < .05$, the Greenhouse-Geisser correction of degrees of freedom was used. The results of the ANOVA were significant for differences among the means, $F(1.57, 176.11) = 35.08, p < .01$. Follow-up pairwise comparisons with Bonferroni corrected alpha levels were all significant. Specifically, the physicians were significantly more confident in their ability to detect ($M = 3.99, SD = .69$) than they were in their ability to treat mental illness ($M = 3.82, SD = .75$), $t(112) = 3.08, p < .01$ (two-tailed). There were also significant differences between the physicians’ agreement with the statement “My medical training prepared me well for detection and treatment of mental illness in primary care patients” ($M = 3.35, SD = .88$) and their confidence ratings for detection, $t(112) = 7.31, p < .01$, and treatment, $t(112) = 5.22, p < .01$ (two-tailed).
Table 3

Mean, standard deviation, skewness and kurtosis of Likert scores for general statements related to the physicians’ perceived competence in detection and treatment of behavior disorders

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>My medical training prepared me well for detection and treatment of mental illness in primary care patients.</td>
<td>113</td>
<td>3.35</td>
<td>.88</td>
<td>-.68</td>
<td>-.83</td>
</tr>
<tr>
<td>I am confident in my ability to detect mental illness in patients seeking services at my clinic.</td>
<td>113</td>
<td>3.99</td>
<td>.69</td>
<td>-.66</td>
<td>1.13</td>
</tr>
<tr>
<td>I am confident in my ability to treat mental illness in patients seeking services at the clinic.</td>
<td>113</td>
<td>3.82</td>
<td>.75</td>
<td>-.49</td>
<td>.26</td>
</tr>
</tbody>
</table>

*Note.* Participants were asked to indicate the extent to which they agreed or disagreed with each statement on a 5-point Likert scale (1 = Strongly disagree, 2 = Somewhat disagree, 3 = Neither agree nor disagree, 4 = Somewhat agree, and 5 = Strongly agree).
Figures 2 and 3 show the participants’ average ratings of the degree of difficulty in treating and detecting nine behavior disorders, respectively. Skewness and kurtosis was calculated for the distribution around all 18 means. Both skewness and kurtosis was within ±1 for 14 of the distributions. The highest skewness and kurtosis obtained was 1.10 and 1.9 respectively. The values suggest a reasonably normal distribution, adequate for the purpose of this analysis. A comparison of the average of the nine detection ratings ($M = 2.89$) with the average of the nine treatment ratings ($M = 3.47$) indicates that Icelandic primary care physicians find treatment significantly more difficult to manage than detection, $t(104) = 12.73, p < .01$ (two-tailed).

A one-way within-subjects ANOVA was conducted on the level-of-difficulty ratings for the treatment of the nine disorders. Because assumption of sphericity was violated, $W(35) = .20, p < .05$, the Greenhouse-Geisser correction of degrees of freedom was used. The results were significant for differences among the means, $F(5.99, 635.22) = 96.56, p < .01$. Follow-up pairwise comparisons with a Bonferroni corrected alpha level were significant for 31 out of 36 comparisons (all $p$ values were < .0014; see figure 2 for visual illustration of the results). The group of disorders that were rated the most difficult to treat were eating disorders ($M = 4.5$). There was a significant difference in the level-of-difficulty ratings between eating disorders and conduct disorder ($M = 4.01$), which was rated the second most difficult to treat on average, $t(109) = 4.05, p < .0014$. The degree to which the physicians rated the level of difficulty in treatment was not significantly different between alcohol abuse/dependence, somatoform, ADHD and conduct disorder. In addition, the average ratings for depression and anxiety were not significantly different. Anxiety and depression were rated the easiest disorders to treat and both had a significantly lower difficulty rating than all other disorders.
Figure 2. Mean Likert scores of the physicians’ ratings of how difficult or easy they found treating nine common behavior disorders in primary care. Numbers on horizontal axis correspond to the following Likert anchors: 1 = Very easy, 2 = Somewhat easy, 3 = Neither easy nor difficult, 4 = Somewhat difficult, 5 = Very difficult. Different patterned bars indicate significant differences between means.

A similar analysis was conducted for the detection ratings. Because assumption of sphericity was violated, $W(35) = .29, p < .05$, the Greenhouse-Geisser correction of degrees of freedom was used. The results were significant for differences among the means, $F(6.15, 688.26) = 48.90, p < .01$. Follow-up pairwise comparisons with a Bonferroni corrected alpha level were significant for 25 out of 36 comparisons (all $p$ values were < .0014; see figure 3 for visual illustration of the results).
Somatoform disorders ($M = 3.55$) and eating disorders ($M = 3.40$) were rated as the most difficult groups of disorders to detect with a significantly higher average difficulty rating than ratings for all other disorders. There was not a significant difference between the two means. Depression, anxiety and bipolar disorders were rated as the easiest group of disorders to detect, but there was not a statistically significant difference among those three means.
Access to and Quality of Mental Health Services

Mean values, standard deviation, skewness and kurtosis of Likert scores for general statements related to how the physicians prefer to utilize mental health services provided by mental health professionals appear in table 4. The results of a paired-samples t-test indicate that when the primary care physicians refer to a mental health professional they more often like to seek consultation so they can continue providing needed mental health treatment ($M = 3.88$) rather than asking the mental health professional to take over mental health treatment ($M = 2.74$), $t(111) = 7.19, p < 0.01$.

The physicians indicated on a Likert-type item to what degree they agreed or disagreed with the statement “I have adequate access to mental health professionals when I need consultation on mental health problems.” A one samples t-test was used to analyze whether the physicians’ average agreeableness with this statement ($M = 2.69$) was significantly different from the neutral value of the Likert scale (3 = neither agree nor disagree). The difference was statistically significant, $t(112) = 2.58, p < 0.01$, suggesting that, on average, the physicians disagree to some extent that they have adequate access to mental health professionals outside primary care.
Table 4

Mean, standard deviation, skewness and kurtosis for items related to how the physicians prefer to utilize mental health services from mental health professionals.

<table>
<thead>
<tr>
<th>Question</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>When I refer to a mental health professional, I generally want the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mental health professional to take over</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mental health treatment.</td>
<td>113</td>
<td>2.74</td>
<td>1.08</td>
<td>.19</td>
<td>-.83</td>
</tr>
<tr>
<td>When I refer to a mental health professional, I generally want</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>consultation so I can continue providing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>needed mental health treatment.</td>
<td>112</td>
<td>3.88</td>
<td>.89</td>
<td>-.92</td>
<td>1.41</td>
</tr>
</tbody>
</table>

*Note.* Participants were asked to indicate the extent to which they agreed or disagreed with the two statements on a 5-point Likert scale (1 = Strongly disagree, 2 = Somewhat disagree, 3 = Neither agree nor disagree, 4 = Somewhat agree, and 5 = Strongly agree).
Mean values, standard deviation, skewness and kurtosis of Likert scores for statements related to the physicians’ perception of the quality of mental health care within and outside the primary health care system as well as quality of communication between them and mental health professionals appear in table 5. Skewness and kurtosis values suggest a reasonably normal distribution, adequate for the purpose of this analysis. A one-way within-subjects ANOVA was conducted on the three items. Because assumption of sphericity was violated, $W(2) = .81, p < .05$, the Greenhouse-Geisser correction of degrees of freedom was used. The results of the ANOVA were significant for differences among the means, $F(1.68, 176.35) = 20.06, p < 0.01$. Follow-up pairwise comparisons with a Bonferroni corrected alpha level were significant for all three comparisons. On average, the physicians rated the mental health care within their clinic as having higher quality ($M = 3.30$) than the mental health care provided outside of primary care clinics ($M = 2.97$), $t(105) = 4.19, p < 0.01$. The mean quality rating for communication between the primary care physicians and mental health professionals was significantly lower than the other two means, $p < 0.01$. 
Table 5
Mean, standard deviation, skewness and kurtosis for items related to the physicians’ perception of the quality of mental health care within and outside the primary health care system as well as quality of communication between them and mental health professionals.

<table>
<thead>
<tr>
<th>Question</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>The written or phone communication between you and mental health professionals is:</td>
<td>113</td>
<td>2.65</td>
<td>1.10</td>
<td>.42</td>
<td>-.54</td>
</tr>
<tr>
<td>The quality of mental health care outside the primary health care system is:</td>
<td>112</td>
<td>2.97</td>
<td>.82</td>
<td>-.15</td>
<td>-1.04</td>
</tr>
<tr>
<td>In general, the detection and treatment of mental illness in my clinic is:</td>
<td>106</td>
<td>3.30</td>
<td>.64</td>
<td>-.12</td>
<td>-.37</td>
</tr>
</tbody>
</table>

*Note.* Participants indicated the quality of mental health care and communication on a 5-point Likert scale (1 = very poor, 2 = poor, 3 = adequate, 4 = good, 5 = very good)
Table 6 depicts the average Likert scores, standard deviation, skewness and kurtosis for potential barriers of adequate mental health care in the physicians’ clinical work. Skewness and kurtosis values suggest a reasonably normal distribution, adequate for the purpose of this analysis. A one-way within-subjects ANOVA was conducted on all seven items to examine whether there was a difference among the means. Because assumption of sphericity was violated, \( W(20) = .34, p < .05 \), the Greenhouse-Geisser correction of degrees of freedom was used. The results of the ANOVA was significant for differences among the means, \( F(4.92, 541.13) = 41.18, p < 0.01 \). Follow-up pairwise comparisons with Bonferroni corrected alpha levels were conducted on all possible pairwise comparisons. Visual illustration of the results is provided in figure 4. The degree to which the physicians agreed that potential barriers interfered with their mental health clinical work was highest for “limited time with patients” (\( M = 3.58 \)) and “limited access to mental health professionals” (\( M = 3.40 \)). There was not a significant difference between those two Likert ratings. However, the two Likert scores were significantly higher than Likert scores for all of the other items (\( p < .002 \)). Significant differences among the following items were not detected: “Lack of screening instruments for detecting mental illness”, “limited training in treatment of mental illness”, “patients are reluctant to report symptoms of mental illness”, and “limited training in detection of mental illness.” There was a significant difference between the lowest Likert score, the degree to which the physicians agreed that “limited interest in mental illness” interfered with the mental health in their clinical work (\( M = 1.87 \)) and all other Likert scores (\( p < .002 \)).
Table 6

Mean, standard deviation, skewness and kurtosis for Likert scores for barriers of adequate mental health care

<table>
<thead>
<tr>
<th>Question</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited time with patients</td>
<td>113</td>
<td>3.58</td>
<td>1.08</td>
<td>-.66</td>
<td>-.24</td>
</tr>
<tr>
<td>Limited access to mental health professionals</td>
<td>112</td>
<td>3.40</td>
<td>1.09</td>
<td>-.43</td>
<td>-.65</td>
</tr>
<tr>
<td>Lack of screening instruments for detecting mental illness</td>
<td>113</td>
<td>2.93</td>
<td>.97</td>
<td>-.16</td>
<td>-.63</td>
</tr>
<tr>
<td>Limited training in treatment of mental illness</td>
<td>113</td>
<td>2.92</td>
<td>1.05</td>
<td>.16</td>
<td>-1.01</td>
</tr>
<tr>
<td>Patients are reluctant to report symptoms of mental illness</td>
<td>113</td>
<td>2.74</td>
<td>1.01</td>
<td>.32</td>
<td>-.73</td>
</tr>
<tr>
<td>Limited training in detection of mental illness</td>
<td>112</td>
<td>2.71</td>
<td>.93</td>
<td>.20</td>
<td>-.91</td>
</tr>
<tr>
<td>Limited interest in mental illness</td>
<td>113</td>
<td>1.87</td>
<td>.95</td>
<td>1.23</td>
<td>1.62</td>
</tr>
</tbody>
</table>

Note. Participants were asked to rate the degree to which they agreed that the above potential barriers interfered with mental health care in their clinical work on a 5-point Likert scale (1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree).
Figure 4. Mean Likert scores of degree to which the physicians agreed or disagreed that the above potential barriers interfered with adequate mental health care in their clinical work. Numbers on horizontal axis correspond to the following Likert anchors: 1 = Strongly disagree, 2 = Somewhat disagree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree. Different patterned bars indicate significant differences between means.
DISCUSSION

The main purpose of this exploratory study was to evaluate Icelandic primary care physicians’ experience with mental health problems and their perceived competence in detection and treatment of mental illness. It was the first empirical attempt to assess the need for improvement in primary mental health care in Iceland. The study was designed to assess primary care physicians’ perception of: 1) prevalence and significance of different behavior disorders in the primary health care clinics, 2) their ability to detect and treat behavior disorders within the primary health care system, 3) the physician’s access to mental health services as well as quality of communication with mental health professionals, and 4) barriers to adequate mental health care within the Icelandic primary health care system.

One of the biggest advantages of conducting a survey on primary care physicians in a small country like Iceland is the opportunity to collect data from a bigger proportion of the population of interest than is possible in countries with larger numbers of inhabitants. Only about 192 physicians in Iceland provide primary care, as it is defined by Iceland’s Health Service Act, which made it easy to ask every person in the population of interest to participate in the survey. Based on the literature on surveys of medical professionals, a low response rate was anticipated. However, 115 primary care physicians, or about 60% of the population of interest, participated in this online survey. Therefore, this study has two advantages over most surveys conducted with primary care physicians: A high response rate and a sample that constitutes a majority of the population of interest.

The average estimate of how many patients the primary care physicians see during a typical workday was approximately 17 patients and the average estimate of the length of time spent with each patient was approximately 18 minutes. This reported average time spent with
each patient is considerably higher than research in Britain and United States suggest. For example, Lipkin (1996) found that general practitioners in the USA spend an average of 12 minutes with a patient. Seeing 17 patients for 18 minutes each adds up to about five hours of direct patient contact each day, leaving about 3 hours for preparing sessions, report writing and other duties, given a typical eight hour work day.

As noted earlier, no data is available on the prevalence of behavior disorders in the Icelandic primary care system. However, studies on the prevalence of behavior disorders have been conducted in many counties around the world, all confirming a high prevalence of behavior disorders in primary care settings. There is no reason to belief that prevalence of behavior disorders in the Icelandic primary health care system deviates much from what has been observed in countries around the world. In congruence with most of these studies, the Icelandic primary care physicians in this study estimated that depression and anxiety are the two most prevalent groups of disorders seen in the Icelandic primary care clinics. A significant number of the physicians also indicated that alcohol abuse/dependence, reaction to severe stress/adjustment, and somatoform disorders were among the most prevalent behavior disorders in their clinic. ADHD, eating disorders, bipolar disorders and conduct disorders were rated, on average, as less prevalent by the physicians. While correctly recognizing the high prevalence of emotional disorders in primary care, the physicians also recognized that they, among all health care professionals, encounter the highest proportion of people suffering from mental illness.

The results indicate that Icelandic primary care physicians are, on average, confident in their ability to detect and treat behavior disorders. Furthermore, they perceive themselves as more competent in detecting rather than treating behavior disorders. At the same time, results from research around the world indicate that many patients with behavior disorders are typically
undetected by primary care physicians (e.g. Coyne et al., 1995). Studies have also shown that even when detected by primary care physicians, behavior disorders are likely to be inadequately treated or not treated at all (Carney et al., 1999; Katon & Schulberg, 1992; Schulberg et al., 1997). Therefore, there seems to be a great discrepancy between perceived competence in detection and treatment of behavior disorders and what may be objective competence in these same areas of professional service among Icelandic primary care physicians. This is not surprising in the light of extensive research from social psychology on attribution theory and cognitive biases showing that people, in general, tend to have positive beliefs about themselves that do not stand up to objective analysis. Particularly relevant in the context of this study is the so called self-serving bias (Miller & Ross, 1975). This bias refers to the fact that people are more likely to claim responsibility for successes than failures. More importantly, the self-serving bias also results in a systematic bias resulting from people thinking that they perform better than average in areas important to their self-esteem. For example, studies have repeatedly shown that a large majority of people claim to be better drivers, less prejudice and more intelligent, among other things, than the average person (e.g., Kruger & Dunning, 1999; Svenson, 1981; Zuckerman & Jost, 2001). Cognitive dissonance may also contribute to explaining the discrepancy between the physicians’ perceived skills and actual abilities. The acknowledged importance of the primary care physicians in detecting and treating behavior disorders in the community combined with the need for competence might create cognitive dissonance that contributes to the elevation perceived competence.

The physicians in this study rated bipolar, depression and anxiety disorders as the easiest to detect among nine prevalent behavior disorders in primary care while somatoform and eating disorders were rated as the most difficult to detect. The physicians' difficulty ratings for
Primary Care Physicians’
treatment of behavior disorders showed that they found it easiest to treat depression and anxiety
disorders, while conduct disorders were rated as the most difficult to treat.

It is not surprising, given the relatively high perceived competence in detection and
treatment of behavior disorders, that the Icelandic primary care physicians prefer to seek
consultation with mental health professionals so they can continue treatment rather than asking
the mental health professional to take over treatment. It is important for a general practitioner to
be able to receive consultation from mental health professionals in difficult cases. It is therefore
of great concern that the majority of the physicians reported that they do not have adequate
access to mental health professionals when they need consultation on mental health problems. At
the end of the survey, a space was provided for the physicians to write comments. Many of the
participants stated that communication between themselves and mental health professionals was
seriously limited. In further support of this observation, it was noted that many of them also
complained that it is extremely rare to receive information from the mental health professionals
about referred patients’ treatment and progress. For example, one physician wrote; “It is
extremely rare to receive information from psychiatrists regarding patients I refer. During the last
nine years, I have once received such information from a psychiatrist”. In congruence with these
written responses, over 50% of participants indicated that they thought that communication
between them and mental health professionals was either poor or very poor. The physicians not
only expressed their concern with poor communication with mental health professional outside
the primary care system but many also commented a lack of resources in the Icelandic health
care system for those patients suffering from serious mental illness. In particular, it was
mentioned that waiting lists for psychiatric services are too long, especially for children and
teenagers. These comments, together with the fact that the physicians rated the quality of mental
health care outside primary care as significantly lower than the quality of mental health care within primary care, suggest considerable skepticism about the adequacy of mental health care services outside primary care. Together with high perceived competence in detection and treatment of behavior disorders, this skepticism might also contribute to the physicians’ tendency to want to continue mental health treatment themselves rather than refer patients to mental health professionals.

The physicians in this study were asked to rate the degree to which they agreed or disagreed that seven potential barriers interfered with mental health care in their clinical work. Based on average Likert scores, only two of the seven were endorsed as interfering with mental health care in the physicians’ clinical work: Limited time with patients and limited access to mental health professionals. In the space provided for comments at the end of the survey, many of the participants emphasized their concern that limited time with patients as well as poor access and poor communication was negatively affecting mental health care of patients seeking services at the primary care clinics. Among the physicians that provided comments at the end of the survey, several commented that on-site psychological or psychiatric services are needed to improve the quality of mental health care at the clinics.

Taken together, the findings of this exploratory study suggest that the Icelandic primary care physicians correctly identify that they, among all health care workers, are the ones seeing the highest proportion of people in the community suffering from mental health problems. They also correctly identify that depression and anxiety are the most prevalent groups of behavior disorders in primary care. However, while they seem to be quite confident in their ability to treat and detect mental illness, especially the more prevalent disorders, extensive amount of research from around the world show extremely poor detection and treatment of behavior disorders in
primary care. Most Icelandic primary care physicians view the detection and treatment of mental illness in their clinic as adequate or good. However, most agree that limited time with patients and limited access to mental health professionals are factors that interfere with adequate mental health services in their clinic.

The study’s results have implications for mental health care in the Icelandic primary care system. First, the results indicate that the Icelandic primary care physicians perceive themselves, or the primary health care system in general, as more capable to detect and treat behavior disorders in primary care patients than is likely to be true. Educating the physicians about the limitations of primary health care systems in detection and treatment of behavior disorders might be necessary to create a greater motivation within the Icelandic primary care system for improvement of mental health care. The first step in this process might be to conduct an objective research on the adequacy of detection and treatment of behavior disorders in the Icelandic primary care system. Secondly, the results indicate a lack of communication between mental health and primary care providers that suggest poor integration between the two types of care. Specifically, many of the primary care physicians complained that they rarely received information regarding diagnosis and treatment progress for referred patients from mental health professionals. Steps need to be taken towards improving flow of information between the two types of care. Lastly, many of the physicians commented that they thought that having mental health professionals on-site would greatly improve mental health services at the primary care clinics. The need for on-site mental health services is further supported by research that consistently indicates that mental health problems are highly overrepresented, yet poorly detected and treated, in these settings.
There are number of interpretative caveats for the present investigation. First, this study was exploratory in nature. As such, it involved conducting numerous statistical tests on differences among averages that might be criticized as capitalizing on chance. However, this limitation was counteracted by using a conservative correction of alpha levels when multiple follow-up comparisons were performed. Second, all participants volunteered to participate in the study. It is therefore important to keep in mind that results may show somewhat higher perceived competence than is true for the population of interest due to self-selection bias. Third, the results of this study are based on self-report measures that are not well protected against reporting errors such as memory or recall biases. Thus, results on the physicians’ estimates on prevalence, number of patients seen per day, length of time spent with patients, etc., should be interpreted with that in mind. This study was not designed to obtain accurate epidemiological information but rather to investigate the primary care physicians’ perception of mental illness and primary mental health care, particularly their perceived competence in detecting and treating behavior disorders. Although the objective competence of Icelandic primary care physicians is unlikely to deviate much from what research from numerous countries around the world show, it would be interesting to examine Icelandic primary care physicians’ detection and treatment of behavior disorders in an objective manner. Future research could also be directed towards patient experience with mental primary health care as well as evaluating the effectiveness and/or efficacy of behavioral treatments for primary care patients.
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APPENDIX A: QUESTIONNAIRE

Basic Questions/Demographics

1. What is your age? _____ years

2. Please indicate gender    Male    Female

3. How many years have you been working as a primary care physician? _____ years

4. Do you work as a primary care clinician in Reykjavik and vicinity or outside of the capital city area?
   Reykjavik and vicinity
   Outside the capital city area

5. Approximately how many patients do you see during a typical work day? _____ patients

6. What is your estimate of the approximate length of time you spend with each patient? _____ min

Prevalence/Significance of Mental Illness

7. What do you estimate are the four most common types of mental health problems in your clinic? Please, rank those four types of mental health problems from 1 (most prevalent) to 4 (least prevalent) by writing the number in front of them.

   ____ Alcohol abuse/dependence
   ____ Manic-depressive illness
   ____ Depression (including mild, moderate and severe)
   ____ Anxiety (e.g. phobias, panic disorder, generalized anxiety disorder and obsessive compulsive disorder)
   ____ Reaction to severe stress, and adjustment disorders (e.g. PTSD and adjustment disorder)
   ____ Somatoform disorders (e.g. somatization and hypochondriacal disorders, and persistent somatoform pain disorder)
   ____ Eating disorders (e.g. anorexia nervosa and bulimia nervosa)
   ____ Hyperkinetic disorder (e.g. disturbance in activity and attention)
   ____ Conduct disorders

8. Which of the following health care professions do you think see the highest proportion of people suffering from mental illness in the society?

   Social workers
   Psychologists
   Psychiatrists
   Primary care physicians
   Other (Indicate) _________________________
### Ability to Detect and Treat Mental Illness

9. How difficult or easy do you find **detecting** the following mental health problems?

<table>
<thead>
<tr>
<th>Mental Health Problem</th>
<th>Very easy</th>
<th>Somewhat easy</th>
<th>Neither easy nor difficult</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol abuse/dependence</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
<tr>
<td>Manic-depressive illness</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
<tr>
<td>Depression (including mild, moderate and severe)</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
<tr>
<td>Anxiety (e.g. phobias, panic, generalized anxiety disorder and obsessive compulsive disorder)</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
<tr>
<td>Reaction to severe stress, and adjustment disorders (e.g. PTSD and adjustment disorder)</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
<tr>
<td>Somatoform disorders (e.g. somatization and hypocondriacal disorders, and persistent somatoform pain disorder)</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
<tr>
<td>Eating disorders (e.g. anorexia nervosa and bulimia nervosa)</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
<tr>
<td>Hyperkinetic disorder (e.g. disturbance in activity and attention)</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
<tr>
<td>Conduct disorders</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
</tbody>
</table>
10. How difficult or easy do you find **treat**ing the following mental health problems?

<table>
<thead>
<tr>
<th>Mental Health Problem</th>
<th>Very easy</th>
<th>Somewhat easy</th>
<th>Neither easy nor difficult</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Somewhat easy</td>
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<tr>
<td>Depression (including mild, moderate and severe)</td>
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<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
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</tr>
<tr>
<td>Conduct disorders</td>
<td>Very easy</td>
<td>Somewhat easy</td>
<td>Neither easy nor difficult</td>
<td>Somewhat difficult</td>
<td>Very difficult</td>
</tr>
</tbody>
</table>

11. My medical training prepared me well for detection and treatment of mental illness in primary care patients.

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

12. I am confident in my ability to **detect** mental illness in patients seeking services at the clinic.

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

13. I am confident in my ability to **treat** mental illness in patients seeking services at the clinic.

|                                    | Strongly disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Strongly agree |
Access to Mental Health Care/Quality of Care and Communication

14. When I refer to a mental health professional, I generally want the mental health professional to take over mental health treatment.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

15. When I refer to a mental health professional, I generally want consultation so I can continue providing needed mental health treatment.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

16. I have adequate access to mental health professionals when I need consultation on mental health problems.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

17. The written or phone communication between you and mental health professionals is:

<table>
<thead>
<tr>
<th>Very poor</th>
<th>Poor</th>
<th>Adequate</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
</table>

18. The quality of mental health care outside the primary health care system is:

<table>
<thead>
<tr>
<th>Very poor</th>
<th>Poor</th>
<th>Adequate</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
</table>

19. In general, the detection and treatment of mental illness in my clinic is:

<table>
<thead>
<tr>
<th>Very poor</th>
<th>Poor</th>
<th>Adequate</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
</table>
20. The following interferes with adequate mental health care in my clinical work:

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited time with patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited training in treatment of mental illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited training in detection of mental illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of screening instruments for detecting mental illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients are reluctant to report symptoms of mental illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited access to mental health professionals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited interest in mental illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B: RECRUITMENT EMAIL MESSAGE

My name is Haukur Sigurdsson and I am a graduate student in Clinical Psychology at Bowling Green State University in Ohio, United States. Presently, I am in the process of completing my master’s thesis. My research project involves better understanding primary care physicians’ experience with detection and treatment within the primary health care system.

I am hoping that you will choose to participate in this research study. Participation involves completing an online questionnaire at a computer of your convenience. I estimate that it will take you no longer than 6 minutes to complete this survey. This study is the first of its kind in Iceland and might be an important contribution to understanding the quality of detection and treatment of mental illness within the Icelandic primary health care system.

Your participation in this study is completely voluntary and the information you provide will be kept confidential. If you have any questions or comments about this study, you can contact Haukur Sigurdsson 699-8191 (haukurs@bgsu.edu) or William H. O’Brien, PhD, my project advisor (wobrien@bgsu.edu).

Click here to participate or get more information
My name is Haukur Sigurdsson and I am a graduate student in Clinical Psychology at Bowling Green State University in Ohio, United States. Presently, I am in the process of completing my master’s thesis. My research project involves better understanding primary care physicians’ experience with detection and treatment within the primary health care system.

I am hoping that you will choose to participate in this research study. Participation involves completing an online questionnaire at a computer of your convenience. I estimate that it will take you no longer than 6 minutes to complete this survey. This study is the first of its kind in Iceland and might be an important contribution to understanding the quality of detection and treatment of mental illness within the Icelandic primary health care system.

The information you provide will be kept confidential. Only I and my advisor will have access to the data. No person at your agency will have access to your responses. Online data will be stored on a password protected server. Since the internet is not 100% secure in terms of privacy, please remember to not leave the partially completed survey open or unattended if completing it on a public computer, and to clear the browser page history and cache when finished with the survey. You should also be aware that some employers use tracking software to monitor and record keystrokes, mouse clicks, and web sites visited which could impact the confidentiality of your responses. Therefore, you may wish to complete the survey on your home computer or a public computer. The Icelandic Data Protection Authority has been informed about this research.

Your participation in this study is completely voluntary. You are free to withdraw consent and to discontinue participation in the study at any time without penalty or explanation. If you have any questions or comments about this study, you can contact Haukur Sigurdsson 699-8191 (haukurs@bgsu.edu) or William H. O’Brien, PhD, my project advisor (wobrien@bgsu.edu). If you have further questions or concerns regarding the conduct of the study or your rights as a research participant, you may contact the Chair of the Human Subjects Review Board, Bowling Green State University at (419) 372-7716 (hsrb@bgnet.bgsu.edu).

Please click on one of the following options to indicate if you wish to participate in this study:

- I have read all of the above information and I am consenting to participate in this study.
- I do not want to participate in this study.