Provider Practices in the Primary Care Behavioral Health (PCBH) Model: An Initial Examination in the Veterans Health Administration and United States Air Force

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The goals of this study were to identify characteristics of both behavioral health providers (BHPs) and the patients seen in a primary care behavioral health (PCBH) model of service delivery using prospective data obtained from BHPs. A secondary objective was to explore similarities and differences between these variables within the Veterans Health Administration (VHA) and United States Air Force (USAF) primary care clinics. A total of 159 VHA and 23 USAF BHPs, representing almost every state in the United States, completed the study, yielding data from 403 patient appointments. BHPs completed a web-based questionnaire that assessed BHP and setting characteristics, and a separate questionnaire after each patient seen on one day of clinical service. Data demonstrated that there are many similarities between the VHA and USAF BHPs and practices. Both systems tend to use well-trained psychologists as BHPs, had systems that support the BHP being in close proximity to the primary care providers, and have seamless operational elements (i.e., shared record, one waiting room, same-day appointments, and administrative support for BHPs). Comorbid anxiety and depression was the most common presenting problem in both systems, but overall rates were higher in VHA clinics, and patients were significantly more likely to meet diagnostic criteria for mental health conditions. This study provides the first systematic, prospective examination of BHPs and practices within a PCBH model of service delivery in two large health systems with well over 5 years of experience with behavioral health integration. Many elements of the PCBH model were implemented in a manner consistent with the model, although some variability exists within both settings. These data can help guide future implementation and training efforts.

Keywords: integrated behavioral health care, integrated primary care, mental health care
There is a growing research base on a variety of service delivery models that has suggested integrated behavioral health models of service delivery can be cost-effective, can improve access to behavioral health services, can improve patient and primary care provider satisfaction with care, and can lead to better clinical outcomes than standard primary care services (Blount, 2003; Blount et al., 2007; Bryan, Morrow, & Appolonio, 2009; Chomienne et al., 2011; Goodie, Isler, Hunter, & Peterson, 2009; Runyan, Fonseca, & Hunter, 2003). Integrated behavioral health care models ideally provide a framework for the delivery of evidence-based behavioral health services in primary care.

One model of integrated behavioral health care being used in large health care systems in the United States is the primary care behavioral health (PCBH) model of service delivery (Robinson & Reiter, 2007). This model, used in the United States Air Force (USAF; Runyan et al., 2003) and the Veterans Health Administration (VHA; Funderburk et al., 2010; Post, Metzger, Dumas, & Lehmann, 2010), involves the integration of a behavioral health provider (BHP) in primary care to work in collaboration with the primary care provider and team on a range of behavioral health issues. Numerous authors have described what the implementation of the PCBH model should look like, including the types of patients seen, the format of appointments, and proposed clinical treatment plans (e.g., Hunter, Goodie, Oordt, & Dobmeyer, 2009; Robinson & Reiter, 2007). In addition, several authors have described which disciplines and specific characteristics of BHPs are ideally suited for these positions as well as the type of training that is necessary to function well in this model (Robinson & Reiter, 2007; James & O’Donohue, 2009). However, only a handful of research studies have examined the actual practice of the BHPs within the PCBH model, and to what extent implementation has been consistent with the theoretical model.

Funderburk et al. (2010) used a chart review to extrapolate the practices of BHPs in a sample of primary care clinics in the VHA. Wray, Szymanski, Kearney, and McCarthy (2012) presented information on the typical format of appointments and types of patients seen using data collected from the VHA national database and information collected from a survey of VHA integrated health care administrators. Both studies provided preliminary evidence that BHPs working within this type of model follow the brief treatment format and typically see patients reporting symptoms of depression and anxiety. However, both studies used retrospective administrative level data and were limited to VHA providers.

More comprehensive and practice-based research on the actual implementation of the PCBH model is important because primary care clinics across the United States (including those in the VHA and USAF) are moving to a PCMH model of primary care service delivery. Empirical examination is necessary to identify what, if any, elements of the PCBH model are affected by setting, population characteristics, or system change implementation and initiation practices. Such research will benefit administrators overseeing new implementations of this model as well as BHPs and primary care providers looking to optimize the delivery of behavioral health service in the PCMH. The purpose of this study was to examine actual implementation of the PCBH in two large health care systems. Both the VHA and the USAF initiated the integration of BHPs into primary care over five years ago. BHPs in these systems are trained to work in a PCBH model of service delivery, and each system has considerable experience implementing this model.

In the VHA, several individual primary care clinics documented successful implementation of behavioral health services in primary care (e.g., Funderburk et al., 2010; Pomerantz et al., 2010; Rubenstein et al., 2010; Tew, Klaus, & Oslin, 2010), and the available evidence at the time supported the use of integrated models of health care (e.g., Blount, 2003; Blount et al., 2007; Runyan et al., 2003). This led to a 2008 directive for all VHA primary care clinics to include integrated mental health services that consist of both care management and colocating a BHP in primary care (Department of Veterans Affairs, 2008), with an emphasis on serving mental health symptomatology such as depression and anxiety. VHA clinics were at liberty to decide how to accomplish this mandate, with

1 Behavioral health is used here as a generic term to include services for health behavior concerns like weight loss, substance dependence/abuse/hazardous use, chronic pain management, and general mental health services, like intervention for panic disorder.
some VHA primary care clinics choosing to involve the BHP by implementing the PCBH model. The VHA supported several training conferences each year, hosted by the VHA Center for Integrated Healthcare and the VHA Primary Care-Mental Health Integration office, in an effort to support BHPs and administrators integrating clinics with a specific focus on those implementing the PCBH model. In addition, consultation was available from VHA primary care sites with existing PCBH programs and the VA Center for Integrated Health care, and model operations manuals and policies were also shared. Despite this guidance, the VHA did not provide further instruction on how to operate beyond the mandate that BHPs be colocated and collaborative with primary care, which resulted in considerable flexibility and variability across VHA primary care clinics.

The USAF took a different approach. After a pilot project at Tinker Air Force Base in 1997–1998 (see Wilson, 2003), mental health and medical leadership in the USAF decided to implement the PCBH model on a larger scale in 2000, called the Behavioral Health Optimization Project (BHOP; “Project” was later changed to “Program”). Like the VHA’s PCBH initiative, BHOP was embedded within a larger USAF effort of primary care optimization, intended to improve clinical preventive services and meet the needs of the active duty military personnel, who often report low interest in receiving behavioral health care, even in the presence of significant behavioral health concerns (Brown, Creel, Engel, Herrell, & Hoge, 2011). It was also intended to increase access to behavioral health services for nonactive duty beneficiaries (e.g., military spouses, military retiree, family members). Although there was no mandate for all USAF primary care clinics to integrate, there was considerable traction for the primary care optimization effort, and the BHOP model rapidly expanded.

A practice manual detailing the implementation of PCBH in USAF primary care clinics was developed (United States Air Force Medical Operations Agency, 2002) and a “train the trainers” approach was used to disseminate a consistent model of care. This training ultimately targeted four groups of BHPs: predoctoral psychology interns, active duty and civilian psychologists, social workers, and USAF social work interns. Overall, the USAF provided a greater amount of guidance to USAF clinics choosing to implement PCBH using this “train the trainer” model compared to the VHA.

The USAF and VHA serve different populations, albeit all individuals with exposure to the military. The USAF medical service treats a younger population with a higher percentage of women due to the inclusion of family members of active duty service members (United States Air Force, 2012a; United States Air Force, 2012b). The VHA cares for an older veteran population (Office of Policy & Planning, 2009) with guidance to provide care to all veterans, including those living in rural areas of the United States. Therefore, deconstructing the practices of BHPs within these two different health care organizations will highlight areas of the PCBH model that are associated with different methods of initiation. Information was gathered on the clinical setting, provider characteristics, and basic appointment information.

**Method**

**Settings**

**Veteran Health Administration.** The VHA has approximately 959 individual primary care clinics that are overseen by 165 larger administrative offices across the United States, serving approximately eight million veterans (United States Department of Veterans Affairs, 2012a). Based on administrative data collected by Wray et al. (2012), 97% ([n] = 160) of the administrative offices reported integrating behavioral health in primary care among their sites, with 90 of those offices reporting implementation of a colocated collaborative care model. Many of these colocated collaborative care sites offered the PCBH model of care. All primary care patients within the VHA are regularly screened for hazardous/harmful alcohol use, depression, and posttraumatic stress symptoms (United States Department of Veterans Affairs, 2012b).

**United States Air Force.** At the time of data collection (2011), the USAF had 76 BHPs providing PCBH services in 46 military treatment facilities around the world. This represents 61% of all USAF military treatment facilities (R. Vanecek, personal communication, April 9, 2012). There were no general mandates for reg-
universal screening for any behavioral health risk factors at the time of the study.

Participants

All BHPs currently working in primary care clinics in the USAF or the VHA were eligible to participate.

Recruitment

To identify possible participants in the USAF, a list of current BHPs (N = 76) working in USAF primary care clinics and their contact information was obtained from the BHOP manager at Air Force Medical Operations Agency. Within the VHA, no comprehensive list of BHPs working in primary care exists. As a result, we obtained a list from VHA Central Office of all individuals responsible for implementing behavioral health care within primary care in the VHA (N = 142). Three emails were sent to these individuals describing the study and requesting assistance in identifying BHPs working in their primary care clinics who might be interested in study participation.

Procedures

All identified BHPs were sent up to three recruitment emails approximately 1 week apart describing the study. Email addresses were grouped, and recruitment emails were sent out across 7 months during parts of 2009–2011 for the VHA and across 6 months in 2011 for the USAF. Interested BHPs were asked to respond to the primary author’s email address, and the research staff scheduled a time to speak with the BHP to briefly review the study in detail, to answer any questions, and to obtain informed consent.

After providing consent, BHPs were randomly assigned to a day of the week, taking into account the days that the BHP saw patients in primary care, to participate in the study. The BHP then chose the date of participation. The research staff informed each BHP that he or she would respond to two different questionnaires on the Internet-based user interface on that day. The background questionnaire was completed only once. Using a procedure similar to a card study (Flaherty et al., 2008; Sommers, Hacker, Schneider, Pugno, & Garrett, 2001), the patient appointment questionnaire was completed after each patient’s visit for that specific study day (if the BHP worked only 4 hr a day in primary care, then he or she was asked to complete it for 2 days, yielding a complete 8 hr of clinical service). Each BHP was instructed that, on the day identified, the information must be provided after every patient consecutively or at the end of the day on each patient consecutively. No identifying information about the BHP or the patient was included in any of the questionnaires. To verify that the BHP could access the Internet questionnaire, all BHPs were asked to log onto the interface during the initial telephone call and problems were resolved. Differing policies between the institutional review boards of the USAF and the VHA allowed us to offer VHA participants a chance to win one of 20 sets of educational materials relevant to their position in primary care, but did not allow us to do this for USAF participants.

Measures

Background questionnaire. A 23-item background questionnaire was developed by the authors to obtain information on the BHP. It includes items assessing the type of provider (e.g., social worker, psychologist), number of years of clinical experience in primary care, number of hours per week seeing patients in primary care, theoretical orientation, types of training received in providing integrated health care, and the type of integrated care model used in primary care. Only those providers who indicated working within a PCBH model were included in this study (47%).

Behavioral Health Appointment Information Survey. The Behavioral Health Appointment Information Survey contains 31 questions assessing the patient’s basic demographics, presenting symptomatology, and the types of clinical interventions the BHP uses with each patient. The authors designed this questionnaire, which focuses on interventions identified within previous studies (Funderburk et al., 2010) or evidence-based interventions that have been suggested as useful within this setting (Hunter et al., 2009). We specifically examined the comorbidity of presenting symptoms based on previous research, which has shown that most primary care patients present with more than one symptom or problem (Funderburk, Maisto, Sugarman & Wade, 2008; Yano et al., 2012).
Data Analysis

Descriptive statistics were used to summarize setting, provider, and patient characteristics data. Chi-square analyses were conducted to examine differences between VHA and USAF settings. Because BHPs tend to do more assessment during an initial visit compared to later visits (Funderburk et al., 2010), this factor was taken into consideration when examining the types of symptoms that patients presented with during a visit.

Results

Response Rates

Veteran Health Administration. Ninety-seven implementation coordinators helped identify BHPs; 15 responded that they either no longer worked within the VHA or did not work in primary care. Overall, this yielded a 76% response rate among implementation coordinators.

Using the information provided by the implementation coordinators, Figure 1 details the recruitment of BHPs. One hundred fifty-nine providers completed the study, representing all 21 Veterans Integrated Service Networks, which are networks of VHA health care facilities across the United States. Because the focus of this study was on providers working within a PCBH model, the VHA results presented here will focus on the data collected from 75 BHPs who identified themselves as working within PCBH models and completed the study. Overall, there was a 35% response rate.

United States Air Force. As Figure 1 depicts, a total of 78 BHPs within the USAF were contacted. Of the 78 identified, 53 were eligible for the study. The remaining 25 were not available due to deployments or having left the USAF. Twenty-three of the 53 eligible USAF BHPs completed the study, representing 15 of 21 USAF bases identified in 13 states across the United States. Overall, this yielded a 43% response rate.

Primary Care Setting

BHPs reported on a variety of features within their settings. The mean number of full-time primary care providers at each primary care clinic was 10 (SD = 8) for VHA and 15 (SD = 17) for USAF. A large majority of BHPs in both settings reported that their patients used the same waiting room as primary care, that their offices were located within primary care (distance from primary care providers office: MVHA = 25 feet, SD = 61; MUSAF = 19 feet, SD = 22), and that they had regular open slots in their schedules for same day appointments (see Table 1). Over two thirds of BHPs indicated that they attended primary care staff meetings, and over half reported that they were regularly present at staff meetings. Approximately 30% reported being regularly invited into patient appointments by primary care providers. BHPs in USAF settings were significantly more likely to report that primary care administrative staff scheduled their appointments than BHPs in VHA settings (96% vs. 67%), \( \chi^2(1, 98) = 7.59, p = .006 \).

As would be expected based on the organizational mandates, the VHA BHPs reported a significantly higher level of screening for post-traumatic stress disorder (PTSD) and alcohol use at their clinics than USAF BHPs. For those screens not included in any organizational mandates, nearly 40% of USAF providers reported that their clinics regularly screened for domestic violence, whereas only about 20% of VHA pro-

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**Figure 1.** Behavioral health provider recruitment flowchart. USAF = United States Air Force; VHA = Veterans Health Administration; PCBH = primary care behavioral health.
Providers reported that their clinics screened for domestic violence, $\chi^2(1, 98) = 4.10, p = .043$.

**Provider Characteristics**

Provider characteristics of BHPs within the VHA and the USAF are presented in Table 2. The mean age of BHPs was just over 40 years old, and they had been practicing in primary care for an average of about four years. The VHA and USAF BHPs reported seeing patients between 20 and 30 hr per week, and VHA and USAF BHPs most often saw patients for 40 hr per week.

The majority of BHPs in both settings were psychologists (VHA 63%, USAF 78%), followed by social workers (VHA 16%, USAF 22%). The VHA BHPs included other provider types, such as psychiatrists (5%), nurse practitioners (3%), registered nurses (4%), and other (9% psychology interns, advanced practice nurses, BHPs with a master’s in psychology). Most providers endorsed using cognitive–behavioral approaches as at least one form of intervention (VHA 87%, USAF 96%). About half of the providers also reported using behavioral approaches (VHA 52%, USAF 43%). When comparing VHA and USAF providers, the only statistically significant difference was that USAF providers endorsed using acceptance and commitment orientation to treatment more often than VHA providers did (48% vs. 21%), $\chi^2(1, 98) = 4.80, p = .029$.

BHPs reported that they had received training in integrated health care in a variety of ways (see Table 2). Most commonly, VHA and USAF BHPs were trained through mentorship or clinical supervision, attending a conference workshop, or through independent reading. In comparing VHA and USAF, BHPs working in VHA settings were significantly more likely to have taken a graduate school course about integrated primary care (25% vs. 0%), $\chi^2(1, 98) = 7.23, p = .007$. On the other hand, BHPs working for USAF were significantly more likely to have taken a certification course in integrated primary care than BHPs working for VHA (52.0% vs. 5.3%), $\chi^2(1, 98) = 28.27, p < .001$.

**Patient Information**

VHA BHPs completed 311 patient questionnaires, with BHPs meeting with an average of four patients on the day of the study ($SD = 2.3$, $Mdn = 3.0$). USAF providers completed 92 patient questionnaires, with BHPs meeting with an average of four patients on the day of the study ($SD = 2.0$, $Mdn = 4.0$). The VHA patients were more likely to be male (85%) and older ($M = 52$ years, $SD = 15$), while the USAF patients tended to be younger ($M = 38$ years, $SD = 17$) and female (62%). A higher
percentage of USAF patients in this sample were being seen for their initial visit on the day chosen for data collection (USAF/H11005 58%, VHA/H11005 37%). If the patient was not being seen for an initial visit, the average appointment number for VHA was 6 (SD/H11005 8.6) and 4 (SD/H11005 2.5) for USAF, with the modal number for VHA and USAF being 2. VHA BHPs reported having more variability in the length of appointments (M/H11005 40 min, SD/H11005 16) than their USAF counterparts (M/H11005 33 min, SD/H11005 12), but the modal appointment lengths (30 min) were the same.

The two most commonly reported presenting problems among the VHA and USAF patients were depression (VHA/H11005 62%, USAF/H11005 42%) and anxiety (VHA/H11005 55%, USAF/H11005 42%), with a larger percentage of VHA patients presenting with symptoms of depression and anxiety compared to USAF patients: depression: χ²(1, 402) = 11.47, p = .001; anxiety: χ²(1, 402) = 4.40, p = .036. VHA BHPs also indicated that a significantly larger percentage of their patients presented with issues related to coping with a medical condition (21.0% vs. 7.6%), χ²(1, 402) = 8.61, p = .003, symptoms of chronic pain (14.0% vs. 5.4%), χ²(1, 402) = 4.80, p = .028, and issues related to a behavior change (e.g., reduce alcohol use, smoking, weight changes; 30% vs. 13%), χ²(1, 402) = 10.57, p < .001, compared to USAF patients. Both sets of providers reported a modest number of patients presenting with insomnia (VHA = 19%, USAF = 25%). The least common presenting problems or symptoms were suicidal ideation (VHA = 3.5%, USAF = 4.3%), dementia (VHA = 2.3%, USAF = 0.0%), psychosis (VHA = 1.3%, USAF = 1.1%), and mania (VHA = 0.6%, USAF = 2.2%).

A greater percentage of VHA patients met diagnostic criteria under the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV; American Psychiatric Association, 2000) for depression (53% vs. 33%), χ²(1, 401) = 11.52, p = .001, PTSD (21.0% vs. 3.3%), χ²(1, 401) = 16.30, p < .001, and alcohol use disorders (10.0% vs. 2.2%), χ²(1, 401) = 5.80, p = .016, compared to the USAF patients. In contrast, a higher percentage of patients meeting with USAF providers met criteria for a diagnosis

Table 2

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>VHA (n = 75 BHPs)</th>
<th>USAF (n = 23 BHPs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider age</td>
<td>41 (10)</td>
<td>43 (13)</td>
</tr>
<tr>
<td>Range</td>
<td>24–63</td>
<td>27–71</td>
</tr>
<tr>
<td>Mode</td>
<td>30</td>
<td>&gt;27</td>
</tr>
<tr>
<td>Years in primary care</td>
<td>4 (4)</td>
<td>4 (3)</td>
</tr>
<tr>
<td>Range</td>
<td>0–21</td>
<td>1–15</td>
</tr>
<tr>
<td>Mode</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>No. hours/week seeing patients</td>
<td>29 (12)</td>
<td>22 (15)</td>
</tr>
<tr>
<td>Range</td>
<td>3–40</td>
<td>2–40</td>
</tr>
<tr>
<td>Mode</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Theoretical orientationsa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBT</td>
<td>87%</td>
<td>96%</td>
</tr>
<tr>
<td>Behavioral</td>
<td>52%</td>
<td>43%</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>31%</td>
<td>26%</td>
</tr>
<tr>
<td>Insight</td>
<td>31%</td>
<td>39%</td>
</tr>
<tr>
<td>ACT</td>
<td>21%</td>
<td>48%</td>
</tr>
<tr>
<td>Psychodynamic or psychoanalytic</td>
<td>16%</td>
<td>21%</td>
</tr>
<tr>
<td>Training in integrated careb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course in graduate school*</td>
<td>25%</td>
<td>0%</td>
</tr>
<tr>
<td>Internship rotation</td>
<td>35%</td>
<td>44%</td>
</tr>
<tr>
<td>Certification course**</td>
<td>5.3%</td>
<td>52%</td>
</tr>
<tr>
<td>Postdoctoral or fellowship experience</td>
<td>31%</td>
<td>13%</td>
</tr>
<tr>
<td>Mentorship or clinical supervision</td>
<td>51%</td>
<td>65%</td>
</tr>
<tr>
<td>Independent reading</td>
<td>61%</td>
<td>48%</td>
</tr>
<tr>
<td>Conference workshop</td>
<td>60%</td>
<td>57%</td>
</tr>
<tr>
<td>Other</td>
<td>6.7%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Note. VHA = Veterans Health Administration; USAF = United States Air Force; BHP = behavioral health provider; CBT = cognitive–behavioral therapy; ACT = acceptance and commitment therapy.

* These categories are not mutually exclusive.

† p < .05. ‡ p < .001
of an adjustment disorder (35% vs. 22%), $\chi^2(1, 401) = 6.54, p = .011$, compared to the VHA patients.

**Mixed symptoms.** As shown in Table 3, 71% (n = 82) of patients being seen for their initial visit in the VHA had more than one presenting problem or symptom compared to 34% (n = 18) within the USAF. The mean and modal number of symptoms reported per patient was 2 within the VHA and 1 within the USAF. A similar pattern was observed for subsequent visits, with VHA BHPs reporting that 56% of patients (n = 109) had more than one symptom, and USAF providers reporting that 36% of patients (n = 14) seen had more than one symptom. For both initial and subsequent visits, the most common symptom pair was depression and anxiety in both VHA and USAF settings. Within VHA settings, the next most common symptom pairs were depression and behavior change and anxiety and behavior change. USAF providers reported their next most common symptom pairs as depression and insomnia and anxiety and insomnia. Table 3 also reflects a similar pattern with regard to the presence of more than two symptoms, with a larger proportion of patients within VHA settings as having more than two symptoms for both initial and subsequent visits.

We also examined the presence of more than two symptoms. Among initial visits, 35 VHA patients (30%) and eight USAF (15%) patients were reported as having more than two symptoms. The most common triple symptom combination was depression/anxiety/behavior change for VHA patients and depression/anxiety/insomnia for USAF patients. Turning to subsequent visits, 40 VHA patients (21%) and six USAF patients (15%) were reported with more than 2 symptoms. The most common triple symptom sets for both settings were depression/anxiety/insomnia and depression/anxiety/behavior change.

**Treatment Plans**

Among patients who were seen by VHA providers for a first appointment, BHPs reported that they discussed a referral to specialty mental health care with 54% (n = 63) of patients. VHA BHPs planned on meeting with 55% (n = 64) of the patients again in primary care. Of those they did not plan to meet with again, VHA BHPs

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Multiple Symptoms by Visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom and visit</td>
<td>VHA</td>
</tr>
<tr>
<td>Symptom pair reported at initial visit</td>
<td></td>
</tr>
<tr>
<td>(n = 82)</td>
<td>(n = 18)</td>
</tr>
<tr>
<td>Depression and anxiety</td>
<td>59% (48)</td>
</tr>
<tr>
<td>Depression and insomnia</td>
<td>24% (20)</td>
</tr>
<tr>
<td>Depression and suicidal ideation</td>
<td>2.4% (2)</td>
</tr>
<tr>
<td>Depression and chronic pain</td>
<td>23% (19)</td>
</tr>
<tr>
<td>Depression and behavior change</td>
<td>37% (30)</td>
</tr>
<tr>
<td>Anxiety and insomnia</td>
<td>23% (19)</td>
</tr>
<tr>
<td>Anxiety and suicidal ideation</td>
<td>1.2% (1)</td>
</tr>
<tr>
<td>Anxiety and chronic pain</td>
<td>16% (13)</td>
</tr>
<tr>
<td>Anxiety and behavior change</td>
<td>29% (24)</td>
</tr>
<tr>
<td>Symptom pair reported at later visit</td>
<td></td>
</tr>
<tr>
<td>(n = 109)</td>
<td>(n = 14)</td>
</tr>
<tr>
<td>Depression and anxiety</td>
<td>48% (52)</td>
</tr>
<tr>
<td>Depression and insomnia</td>
<td>19% (21)</td>
</tr>
<tr>
<td>Depression and suicidal ideation</td>
<td>6.4% (7)</td>
</tr>
<tr>
<td>Depression and chronic pain</td>
<td>15% (16)</td>
</tr>
<tr>
<td>Depression and behavior change</td>
<td>24% (26)</td>
</tr>
<tr>
<td>Anxiety and insomnia</td>
<td>16% (17)</td>
</tr>
<tr>
<td>Anxiety and suicidal ideation</td>
<td>4.6% (5)</td>
</tr>
<tr>
<td>Anxiety and chronic pain</td>
<td>10% (11)</td>
</tr>
<tr>
<td>Anxiety and behavior change</td>
<td>22% (24)</td>
</tr>
</tbody>
</table>

*Note.* Values are percent (n) for patients who were reported as having more than one symptom. VHA = Veterans Health Administration; USAF = United States Air Force.
actually made a referral to specialty mental health care with 28% \((n = 32)\) of those patients.

Within the USAF, providers discussed a specialty mental health referral with 32% \((n = 17)\) of first-time patients. USAF BHPs planned on meeting with 66% \((n = 35)\) of the patients again in primary care. Of those they did not plan to meet with again, USAF BHPs made an actual referral to specialty mental health for 13% \((n = 7)\) of them.

**Discussion**

Data in this study indicate that there are many similarities between providers in the VHA and USAF PCBH practice models. The VHA and USAF typically place their BHPs within close proximity of primary care providers, use the primary care waiting room for visits, use a shared electronic medical record, and have same-day BHP appointments available. The VHA and USAF BHPs report regular screening for depression, nicotine use, and alcohol misuse within their clinics following the national guidelines to screen all adult primary care patients for these risk factors (United States Department of Veterans Affairs, 2012b). Of note, a larger number of USAF BHPs (39%) reported that patients are screened regularly for domestic violence, although 19% of VHA providers also reported doing so. When considering the high prevalence rates of domestic violence within the military, ranging from 13–58% of veterans and 13–47% in active duty military personnel (Marshall, Panuzio, & Taft, 2005), it is encouraging to observe that there are VHA and USAF providers and clinics taking the initiative to screen for domestic violence as well.

Similarly across both the VHA and the USAF, these data show that psychologists are primarily being hired to fill BHP positions, with a majority of them coming from a cognitive–behavioral or behavioral–theoretical orientation. Likely due to the small number of psychology doctoral programs incorporating integrated health care into curricula (Blount & Miller, 2009; O’Donohue, Cummings, & Cummings, 2009), a majority of the training for these providers appears to be happening after graduate school through either a certificate course, clinical supervision, workshops, or independent reading. More than half of the BHPs working within the USAF reported having completed a certification course to train for their role in primary care, a much larger number than those working within the VHA. This difference in training may be due to the USAF focus on training within its curriculum and the organization’s clear interest in having BHPs practice in a PCBH service delivery model only, whereas the VHA is open to other models of integrated health care.

Not surprisingly, patients seen by BHPs in the two different settings significantly differed by sex and age. In addition, a greater number of VHA patients met criteria for more severe *DSM–IV* diagnoses, such as PTSD, depression, and substance use disorders. In contrast to the VHA BHPs, the USAF BHPs reported meeting with a greater number of patients reporting adjustment disorders. These results could be due to several factors. First, it is possible that patients seen by VHA BHPs do in fact have more significant mental health conditions than those seen by the USAF BHPs. This conclusion matches past research documenting the increased likelihood of veterans experiencing poorer physical health (Schnurr & Spiro, 1999) and a greater number of chronic physical and mental health conditions (Bascarino, 1997) than civilians. This result also could be related to concerns on the part of the BHP and/or the patient of the potential negative impact a *DSM–IV* diagnosis might have on the active duty military member’s career.

Yet, even with these differences in populations being served and the implementation methods, the actual clinical practice of the BHPs appears to be quite similar. Both sets of providers indicated variability in the number and length of appointments, supporting the inherent flexibility often noted by those who have described the PCBH model (Robinson & Reiter, 2007) to adjust to the patient’s needs. At the same time, the modal appointment number for the patients seen on the day of data collection indicates that most patients were being seen for their second visit and the length of appointments was 30 min across both settings, which fits closely with the parameters outlined by Robinson and Reiter (2007) on what BHPs should do when implementing the PCBH model, suggesting consistency with the PCBH model.

Similar to the findings of Funderburk and colleagues (Funderburk et al., 2008; Funder-
burk et al., 2010) and Wray et al. (2012), depression and anxiety appear to be the two most common presenting symptoms and problems BHPs encounter when working in primary care, with a large number of patients reporting symptoms of both depression and anxiety. Other co-morbid presentations were depression or anxiety, with issues involving either behavioral changes or insomnia. A notable discrepancy within our data that matches previous research (Funderburk et al., 2008, Funderburk et al., 2010) is the low number of patients seen for PTSD, alcohol, and smoking, even though a majority of the clinics reported regularly screening for these symptoms or health behaviors. Within the VHA, there are specific programs and clinics available for patients to enroll in if they are experiencing PTSD, alcohol dependence, or want to quit smoking. However, these programs and clinics do not typically handle patients experiencing subthreshold symptoms, such as at-risk drinking, or discuss motivations to either seek treatment for PTSD or to change their alcohol or tobacco use. Future research should examine this discrepancy more fully to identify whether there exist patient, provider, or system barriers that prevent these types of patients from being seen by integrated BHPs.

Across both settings, a large number of patients seen for an initial visit (32% in USAF, 54% in VHA) appeared to be experiencing symptoms that BHPs considered as potentially benefiting from specialty care, given that the BHPs reported discussing a referral to specialty care with them. However, fewer than half of those patients were actually referred to specialty care. A majority of patients seen for an initial visit was identified by the BHP as someone whom the BHP planned to see again in the future.

This study is the first step toward understanding the actual practice of BHPs working in primary care settings in an effort to help identify what the PCBH model looks like when it is actually implemented, compared to how it has been described theoretically. In addition, this study provides initial evidence that the method of implementation and population served may not drastically affect the BHP characteristics and patient appointment characteristics (i.e., duration or number) within the PCBH model, as may have been assumed. This study’s use of a web-based questionnaire allowed us to prospectively collect information from actual BHPs across one day of clinical service rather than using retrospective administrative data. Because most of the BHPs filled out the questionnaire on that day, it likely reduced recall problems that typically can affect retrospective self-report questionnaires. In addition, the use of a web-based questionnaire allowed us to obtain information from BHPs working in primary care settings across the entire United States, helping to establish the generalizability of the findings. Our response rate from BHPs was also slightly higher (35% in the VHA, 43% in USAF) than that typically found in studies using email recruitment (see Shih & Fan, 2009, for a meta-analysis that found the typical email response rate is 33%;). Furthermore, it is likely that our response rate may have been higher than we are able to report, because the preestablished email listservs used may have included many individuals who were not BHPs.

Study Limitations

Although this study has important strengths, it also has some limitations. Foremost, the study relied on self-report to obtain information from the BHPs. Although a majority of these providers filled out the questionnaire after each patient visit, thereby reducing recall bias, it is possible that demand characteristics influenced their reports of their patients. Also, providers may have reported PTSD as anxiety rather than as its own category, thus contributing to an underrepresentation of PTSD. This could be remedied by using more explicit language in the measures. In addition, we asked BHPs to fill out the questionnaire across only one day of clinical service to help decrease participant burden. Although this allowed us to obtain a glimpse of actual practice among these providers, it would be beneficial if future studies involved asking providers to complete the questionnaire across multiple days, yielding a higher number of patients. Although almost 30% of the USAF BHPs participated in the study, this yielded a significantly lower number of BHPs and patient appointments compared to the VHA. As such, how representative the USAF results are could be limited compared to the data collected from over 100 VHA providers. Another limitation is that we only examined two large and potentially unique health care systems compared to civilian
health care services, due to the population that they serve and their lack of reliance on health insurance. Therefore, future research should examine the importance of these variables in other primary care settings that employ this model of health care.

**Study Implications**

With an increasing number of primary care practices transitioning to a medical home model, now is the ideal time to consider integrating behavioral health services (Hunter & Goodie, 2010). As those practices integrate, information will be needed to guide training programs, administrators, researchers, as well as BHPs on what they should plan and/or expect to encounter as they work within a PCBH model. These data can inform the types of core competencies and skills that BHPs will need to address the behavioral health needs of primary care patients in an efficient and effective evidence-informed manner that can impact population health outcomes. For instance, these data suggest that it is important to continue to support the development of psychology doctoral programs in this arena due to the large number of psychologists employed in these positions, with special attention on training psychologists how to conduct brief interventions (i.e., modal number of appointments = 2; length = 30 min).

Administrators can use the information this study provides to help guide hiring practices and expectations on the types of patients that can be effectively targeted using this model of care. For instance, it is clear that current applicant pools may be lacking the training that typically is derived from specific nongraduate school training courses, and their exposure to the PCBH model may be from other experiences that may not be apparent in their résumés.

These data can also provide a guide for future research. For instance, researchers might want to pay closer attention to multiple symptom presentations to determine what interventions are most effective for this group of patients. Future research should also examine the process associated with the BHP’s decision to refer patients to specialty care, as well as the interventions that may help result in successful engagement of the patient in specialty care. In addition, researchers should continue to examine how to best approach patients with adjustment disorder, because it is clear from the USAF data that many patients are not coping well with significant life stressors, and understanding how to best serve them is important.

Much has been written about the implementation of PCBH model of service delivery in primary care from a theoretical perspective, and there is a wealth of anecdotal information from practitioners in the field about what constitutes success and how to achieve it. However, there is a lack of scientifically robust data to guide this model’s implementation. This study’s data suggest that, although methods of initiation and the populations served differ, the actual practice of the BHP can be quite similar. Future research should continue to explore this question, because we only scratch the surface of BHP clinical behavior. In addition, research should examine the collaborative relationship among providers, interventions used, patient outcomes, and whether any of these may be related to method of initiation or population served.

**References**


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