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Preliminary Outcomes, Acceptability, and Feasibility of a Brief Crisis Response Planning Intervention for Reducing Suicide Risk in Primary Care Behavioral Health Patients

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Abstract

Primary care is an important setting for improving identification and treatment of people at risk for suicide. However, there are few developed protocols for management of suicide risk in this setting. This study aimed to evaluate the preliminary outcomes, acceptability, and feasibility of a brief crisis response planning intervention for patients at a moderate risk for suicide in a primary care behavioral health (PCBH) setting. The outcomes examined included change in suicidal cognitions, suicidal intent, hope, and coping efficacy. Twenty-two adult primary care patients at moderate risk for suicide participated in this study, which involved filling out self-report measures before and after creating a crisis response plan with a behavioral health consultant (BHC). Patients were contacted four months after their initial visit to complete follow-up measures and respond to open-ended questions about the intervention. So far, 16 patients have participated in the follow-up interview. BHCs were also interviewed about their perceptions of the intervention. Paired-samples t-tests evaluated changes from pre- to post-treatment, and within-subjects repeated measures ANOVAs evaluated changes across time. Thematic analysis was used to analyze responses to open-ended questions. Patients showed declines in suicidal intent within session and at follow-up. Patients did not show increases in hope or coping efficacy within session, but did demonstrate increases at follow-up. Patients did not demonstrate changes in suicidal cognitions. Patients and BHCs alike found the intervention helpful, and few had concerns about the implementation of this intervention in the PCBH model. Findings provide preliminary evidence that moderate suicide risk can be managed in primary care through integration of BHCs into the primary care team.

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Introduction

A few years ago, midway through my time working as a behavioral health intern at Community Clinic, I was talking to one of the medical providers about his experience working with suicidal patients. A cloud came over his face as he recalled one young woman in particular that he had lost to suicide. “Even though I have seen thousands of patients since then, I still think about her often… I just wish there was more we could do,” he said to me. I am sure this provider is not alone in his feelings of sadness and remorse about his inability to prevent a patient’s suicide, despite his best efforts.

Suicide claims the lives of over 800,000 people per year worldwide (World Health Organization [WHO], 2012). Suicidal individuals are frequently seen in primary care (Schulberg, Bruce, Lee, Williams, & Dietrick, 2004) because, for most people, primary care is the first or only point of entry into the healthcare system (Kessler & Stafford, 2008). Indeed, about half of people who die by suicide visit their primary care provider (PCP) in the month before their death (Ahmedani et al., 2014; Luoma, Martin, & Pearson, 2002) and about 20% visit their PCP within just one week of taking their life (Younes et al., 2015). Thus, primary care may be a particularly important setting for improving identification and treatment of people at risk for suicide.

Despite the frequency of suicidal patients presenting to primary care, there are very few developed protocols for management of suicidal patients in this setting. Existing protocols have largely been developed for and evaluated with physicians and other medically-trained members of the primary care team (e.g., McFaul, Mohatt, & DeHay, 2014; Morriss, Gask, Battersby, Francheschini, & Robson, 1999; Wintersteen & Diamond, 2013), although evidence suggests a team-based approach involving collaborative treatment that includes mental health care providers in primary care may be more effective (Bruce et al., 2004; Unutzer et al., 2006).

Given they are often trained specifically in suicide risk assessment and management, embedding mental health care providers into the primary care team appears critical to reducing suicide risk among primary care patients. However, to my knowledge there are no evidence-based protocols for mental health practitioners in primary care that focus on direct management of suicide risk. As such, I aimed to evaluate the preliminary outcomes, acceptability, and feasibility of a brief crisis response planning intervention for use by mental health care providers managing suicide risk in a primary care behavioral health (PCBH) setting.

Suicide as a Public Health Concern

Suicide is a serious public health problem. Over 47,000 individuals died by suicide in 2017 in the United States alone (Center for Disease Control and Prevention [CDC], 2017), and more than 10 million adults reported seriously considering suicide in the past year (Center for Behavioral Health Statistics and Quality, 2018). On top of the substantial emotional pain experienced by family and friends left in the wake of completed suicides, suicide also costs the United States upwards of $93 billion a year in combined medical and work loss costs (Shepard, Gurewich, Lwin, Reed, & Silverman, 2016).

Many people who engage in suicidal behavior do not seek mental health services for their problems in the weeks leading up to a suicide attempt (Luoma et al., 2002). Reasons for not seeking professional mental health services include perceptions that help is not needed, lack of time, a preference for self-reliance, a preference for seeking help from family or friends instead, pragmatic barriers (e.g., long wait times, financial concerns, not knowing where to seek help), stigma, and doubt that professional help would be beneficial (Czyz, Horwitz, Eisenberg, Kramer, & King, 2013). A greater proportion of individuals seek help in medical settings, most commonly primary care clinics and outpatient general medical settings (Ahmedani et al., 2015).

However, even access to treatments in a general medical setting can be difficult because many of the factors that increase suicide risk, such as financial instability, mental illness, and social isolation, are also associated with barriers to health care (WHO, 2012). Across settings, racial and ethnic minorities demonstrate consistently lower rates of help-seeking for suicidal thoughts and behavior than non-Latinx Whites (Ahmedani et al., 2015). Studies have identified poor doctor-patient communication, perceived discrimination, and cultural variation in stigma about mental illness as factors that are likely influential in driving this disparity (Ashton et al., 2003; Hausmann, Jeong, Bost, & Ibrahim, 2008). Enhancing accessibility to care and delivering treatment in a way that minimizes stigma about mental illness seem to be important next steps for improving suicide prevention and intervention efforts.

What is Suicide?

The term "suicidal" is quite broad, encompassing not a single state but a wide variety of behaviors. For example, suicidal thoughts differ from suicidal intent, plans, attempts, and completions. It can be useful to consider suicidal behavior as lying on a continuum, ranging from passive suicidal ideation all the way up to completed suicide. On the lower end of the spectrum, passive suicidal ideation refers to a wish to be dead, without self-injurious content (e.g., "Things would be so much easier if I could just not wake up tomorrow.") On the higher end of the spectrum, suicide attempts involve deliberate self-injury with at least some intention of dying as a result. Table 1 details a set of terms and definitions. For further information on nomenclature and classification of suicide, see Crosby, Ortega, and Melanson (2011).

Risk and Protective Factors

The scope and severity of suicide as a public health problem has prompted a wealth of research devoted to understanding, predicting, and preventing suicidal behavior, with

identification of risk and protective factors named as a key component of the national suicide prevention initiative (WHO, 2012). According to the risk factor typology described by Kraemer and colleagues (1997), a risk factor must be positively associated with and precede the negative outcome of interest and can be used to divide the population into high- and low-risk groups. For example, depression is a risk factor for suicide because individuals who are depressed are more likely than individuals who are not depressed to attempt suicide at a later date. Conversely, a protective factor must be associated with a lower likelihood of the negative outcome of interest, or reduction in a risk factor's impact.

The primary aim of most studies in the suicide risk factor literature is to identify a set of predictors that both professionals and nonprofessionals can use to improve detection of risk for suicide (Franklin et al., 2017). Some of the most commonly studied risk factors for suicide include depression, bipolar disorder, schizophrenia, borderline or antisocial personality disorders, conduct disorder, psychotic disorders, substance abuse, chronic health problems, access to lethal means, stressful life events, family history of suicide, experiences of childhood abuse, and prior suicide attempts (American Foundation of Suicide Prevention [AFSP], 2017). Although less frequently studied, protective factors include access to mental health care, social connectedness, and effective problem-solving skills (Suicide Prevention Resource Center [SPRC] & Rodgers, 2011).

A majority of suicide risk factors are derived from epidemiological studies (Franklin et al., 2017). These studies have taken an actuarial, rather than theoretical, approach to identification of risk factors for suicide. Typically, epidemiological investigations of risk factors examine these as static or trait-like phenomena and in isolation, rather than taking a more dynamic and complex perspective. In a recent meta-analysis of 365 longitudinal studies, Franklin

and colleagues (2017) found these risk factors are weak and inaccurate predictors of suicidal behavior and our ability to predict suicide has not improved within the past 50 years. It is perhaps unsurprising that any single risk factor considered in isolation will be inherently limited in its ability to accurately predict future suicidal behavior. Among other recommendations, the authors suggest risk and protective factors derived from theory may improve prediction of suicide risk (Franklin et al., 2017).

Models of Suicidal Behavior

Within the past three decades, several theories of suicide have been developed. The predominant psychological theories of suicide include the comprehensive cognitive model of suicide (Wenzel & Beck, 2008), the interpersonal-psychological theory of suicide (IPTS; Joiner, 2005), the fluid vulnerability theory of suicide (Rudd, 2006), and the functional model of suicide (Nock & Prinstein, 2004). Each of these is reviewed below. For a more comprehensive review of additional major theories of suicide, see Barzilay and Apter (2014), or Selby, Joiner, and Ribeiro (2014).

Comprehensive cognitive model of suicide. The comprehensive cognitive model of suicide grew out of Beck and colleagues' (1990) assertion that suicide is strongly influenced by hopelessness, a state which disrupts the cognitive triad of beliefs about oneself, others, and the future. More recently, Wenzel and Beck (2008) argued that the interaction between dispositional vulnerability factors and cognitive processes predicts suicide risk (Figure 1). Dispositional factors that may increase risk include impulsivity, aggression, problem-solving deficits, perfectionism, and neuroticism. This theory contends cognitive processes such as biases in attention, information processing, and memory may impair an individual's ability to recall reasons for living or being hopeful about life and contribute to selective processing of suicide-

relevant stimuli. Accordingly, a person engages in a suicidal act when he or she can no longer tolerate the distressing thoughts and emotions that emerge during a suicidal crisis. Many of the constructs included in this model have an empirical basis (for a review, see Wenzel, Brown, & Beck, 2009). For instance, Cha and colleagues (2010) found suicide-specific attention bias (as demonstrated by a bias toward suicide-related words compared to neutral words in an emotional Stroop task) predicts the likelihood of a person ultimately making a suicide attempt, while attentional bias toward negatively-valenced words more generally did not predict any suicide-related outcomes.

Interpersonal-psychological theory of suicide. The IPTS asserts suicidal desire develops when an individual experiences perceived burdensomeness (i.e., belief that they are a burden on their family and friends, or that their loved ones would be better off without them) and thwarted belongingness (i.e., social isolation, disconnection from others) conjointly (Van Orden et al., 2010). However, suicidal desire alone is insufficient to prompt a suicide attempt. The IPTS claims in order for a person to make a suicide attempt, an acquired capability to die (i.e., fearlessness of death) must also be present (Van Orden et al., 2010). This fearlessness of death may be acquired over time through habituation to painful, provocative, frightening, or dangerous situations by way of life experiences such as combat exposure, self-injury, or drug abuse. The IPTS is unique in that it is one of the only theories that attempts to distinguish between people who have thoughts about suicide but do not act on those thoughts and people who do go on to attempt suicide (Figure 2).

The IPTS is well-supported by empirical literature. Perceived burdensomeness and thwarted belongingness are related to depressive symptoms and suicidal ideation (Cukrowicz, Cheavens, Van Orden, Ragain, & Cook, 2011; Jahn, Cukrowicz, Linton, & Prabhu, 2011; Van

Orden, Witte, Gordon, Bender, & Joiner, 2008), and direct tests support a link between self-harm behaviors, acquired capability, and eventual suicide attempts (Bender, Gordon, Bresin, & Joiner, 2011; Joiner et al., 2009). However, perceived burdensomeness is a particularly strong risk factor for suicide; it remains a significant predictor of suicide risk even after controlling for the effects of robust risk factors like depression and hopelessness (Van Orden, Lynam, Hollar, & Joiner, 2006). More recently, studies have failed to find evidence for the synergistic interaction between perceived burdensomeness and thwarted belongingness originally hypothesized by the IPTS and instead have found support only for a main effect of perceived burdensomeness on suicidal ideation (Cero, Zuromski, Witte, Ribeiro, & Joiner, 2015), suggesting perceived burdensomeness alone may be enough to increase suicidal desire.

Fluid vulnerability theory. The fluid vulnerability theory assumes suicidal episodes are time-limited and the factors that trigger and contribute to these episodes are fluid and changeable (Rudd, 2006). This theory posits baseline risk for suicide varies from person to person and is determined by a combination of biological (e.g., genetic predisposition), cognitive (e.g., attention bias), and behavioral (e.g., poor interpersonal skills, emotion regulation deficits) susceptibilities (Rudd, 2006). This baseline risk may become elevated for limited periods of time by acute aggravating factors (e.g., emotional distress, financial difficulties, medical problems), but resolves when these acute factors are effectively targeted. Each suicidal crisis is experienced as a conglomeration of thoughts, emotions, behaviors, and physiological symptoms, referred to as the "suicidal mode" (Figure 3). Importantly, Rudd (2006) also hypothesized becoming suicidal can become a learned response to distress, such that the suicidal mode becomes more easily activated after each additional activation.

Consistent with the propositions of fluid vulnerability theory, Bryan and colleagues (2013a) tested the interactive effects of two static traits (i.e., shame and pride) with state hopelessness to predict current suicidal ideation among a sample of 77 active duty military personnel. They found that the deleterious effects of state hopelessness on current suicidal ideation were especially pronounced for patients with higher levels of trait shame, while pride buffered the effects of hopelessness on current suicidal ideation. Their findings provide preliminary empirical support for the hypothesized mechanisms of risk elevation in fluid vulnerability theory, though further empirical examination of this theory is needed.

Functional model of suicide. All of the most influential theories of suicide have attempted to address the question of why people attempt suicide. Many of these theories are built around the notion that suicide serves as an escape mechanism. For instance, Baumeister (1990) hypothesized suicide serves as a means of escape from an unbearable state of distorted self-awareness, Williams (1997) hypothesized suicidal ideation develops from feelings of entrapment due to defeat in social situations, and Shneidman (1993) suggested suicide arises as the only perceived solution to escape "psychache", an intense and intolerable emotional pain that differs from depression and hopelessness. In contrast to these theories, which see suicide primarily as an escape from negative emotions or situations, Nock and Prinstein (2004) proposed a functional model of suicide that takes a more dimensional approach to understanding motivations for suicide.

Drawing on findings from narrative case reports, empirical findings related to suicidal behavior, and studies of self-injurious behaviors (e.g., head banging) in developmentally disabled populations, Nock and Prinstein (2004) proposed four primary functions of self-mutilative behavior (Figure 4) that lie along two dichotomous dimensions: contingencies that are

automatic (i.e., intrapersonal) versus social (i.e., interpersonal), and reinforcement that is positive (i.e., presentation of a positive stimulus) versus negative (i.e., removal of an aversive stimulus). That is, Nock and Prinstein (2004) asserted individuals engage in suicidal behaviors either (1) to add a desirable internal state (e.g., "To feel something, even if it is pain"); (2) to remove an aversive internal state (e.g., "To stop bad feelings"); (3) to obtain desirable social outcomes (e.g., "To get attention or let others know how I feel"); or (4) to avoid undesirable social consequences (e.g., "To avoid punishment"). In a sample of 108 adolescent psychiatric inpatients referred for self-injurious thoughts or behaviors, more than half endorsed engaging in self-harm behaviors to stop bad feelings (Nock & Prinstein, 2004), consistent with prior theories proposing suicidal behavior serves as an escape from emotional distress. This pattern was replicated in a sample of 72 active duty soldiers who had attempted suicide, all of whom endorsed attempting suicide primarily to alleviate emotional distress (Bryan, Rudd, & Wertenberger, 2013b). However, soldiers in this sample also reported attempting suicide to communicate how desperate they were (69.1%), to feel something even if it was pain (67.6%), and to escape from other people (41.2%), supporting all four dimensions of the functional model of suicide and suggesting motives for suicide are not mutually exclusive (Bryan et al., 2013b).

Evidence-Based Approaches to Treatment of Suicide Risk in Specialty Care

The field of suicide prevention has faced many methodological challenges that make measurement of treatment effectiveness incredibly difficult. First, the extant literature on suicide is rife with poorly-defined constructs whose meanings lack consensus (e.g., suicidality, suicide risk, suicidal ideation, suicidal behavior). For example, national surveys estimating rates of occurrence use different definitions for what constitutes "suicidal behavior." Such definitional ambiguity compromises the accuracy of sociodemographic trends and makes comparison across

studies and generalizability of results difficult (Silverman, 2006). In response to calls for development of a consistent terminology with standardized definitions from both the Department of Veterans Affairs (2008) and the Centers for Disease Control and Prevention (CDC; Crosby, Ortega, & Melanson, 2011), the Self-Directed Violence Classification System (SDVCS; Brenner et al., 2011) was created. The SDVCS is based on prior nomenclatures and classification systems (e.g., Silverman et al., 2007), and comprises 22 terms related to suicidal and non-suicidal self-directed violence categorized into thoughts and behaviors, which are further divided into subtypes. The terms in the SDVCS are neutral with respect to theory and culture and are mutually exclusive, so any instance of ideation or behavior can only be classified by one term (Brenner et al., 2011).

A second methodological challenge is that many of the effectiveness trials examining interventions for decreasing suicide risk are conducted in outpatient settings rather than acute care settings, and exclude individuals at imminent risk for suicide in favor of immediate hospitalization (Brown & Jager-Hyman, 2014; Pearson, Stanley, King, & Fisher, 2001). This limitation makes it difficult to determine whether interventions that are effective for lower-risk individuals are also effective for those at a higher risk level. Third, the variable nature of suicide risk also makes it very difficult to measure. For example, although suicidal ideation waxes and wanes over time, few studies utilize appropriate measures for tracking these fluctuations. Fourth, the low base rate of suicidal behavior means very large samples are needed in order to conduct adequately powered studies. Consequently, many of the studies assessing suicide prevention treatment effectiveness are underpowered, which could mean treatment effects have been missed (Brown & Jager-Hyman, 2014). Fifth, many of the published randomized controlled trials (RCTs) examining interventions for suicide have not provided detailed psychotherapy manuals,

which makes replication studies nearly impossible (Brown & Jager-Hyman, 2014). Finally, the suicide prevention literature lacks effectiveness trials that assess whether specific treatments work in real-world settings (i.e., extend beyond laboratory settings). In order to increase the external validity of intervention trials, studies with inclusion and exclusion criteria reflective of patients who present to treatment in the real world are needed. For example, exclusion of participants who abuse substances could result in a biased sample of suicide attempters (Bateman & Fonagy, 1999).

Still, a handful of suicide-specific treatments have been shown to be effective at reducing suicide attempts among patients receiving care in traditional mental health care settings (Jobes, Au, & Siegelman, 2015; Rudd, Williamson, & Trotter, 2009). The three major approaches that have been shown to be effective for treating suicide risk through replicated RCTs include dialectical-behavior therapy (DBT; Linehan et al., 2006), two forms of suicide-specific cognitive behavioral therapy (i.e., cognitive therapy for suicide prevention [CT-SP; Brown et al., 2005] and brief cognitive behavioral therapy [BCBT; Bryan & Rudd, 2018]), and the collaborative assessment and management of suicidality (CAMS; Jobes, 2012). Each is described in more detail below.

Dialectical behavior therapy (DBT). DBT is a form of cognitive-behavioral therapy (CBT) that was originally designed to treat suicidal and self-harm behaviors among individuals with borderline personality disorder (Linehan, 1993). In contrast to traditional CBT approaches, which primarily prioritize change, the dialectical approach of DBT allows for a simultaneous focus on both acceptance and the need for change. Traditional DBT includes weekly individual psychotherapy sessions, weekly skills training groups focused on building mindfulness, distress tolerance, interpersonal effectiveness, and emotion regulation skills, and regular telephone

consultation and therapist consultation meetings (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991). In DBT, life-threatening behaviors are targeted first, therapy-interfering behaviors are targeted next, and any other behaviors that interfere with clients' quality of life are targeted third.

Since its inception, DBT has been tested in several RCTs to establish its effectiveness over treatment as usual. For example, Linehan and colleagues (2006) conducted an RCT investigating whether DBT's effectiveness could be accounted for by common factors by comparing women with borderline personality disorder and a history of suicide attempts receiving a year of DBT (n = 52) to those receiving a non-behavioral community treatment (n = 49). They found DBT participants were half as likely to make a suicide attempt, were less likely to be hospitalized for suicide risk, had fewer psychiatric emergency room visits, and were significantly less likely to drop out of treatment than participants receiving the common factors treatment, indicating DBT is uniquely effective at reducing suicide attempts. Similarly, Linehan and colleagues (2015) ran an RCT comparing standard DBT, the skills training component of DBT (DBT-S), and the individual therapy component of DBT (DBT-I), to evaluate the relative importance of the various components. They found all three treatment conditions resulted in similar improvements in the frequency and severity of suicide attempts, suicidal ideation, and use of crisis services due to suicidality (Linehan et al., 2015).

Although these results are promising, DBT is a labor-intensive and long-term treatment designed to last for an entire year (Linehan et al., 1991). Because DBT is such a demanding model of therapy for patients (patients have to attend one hour of individual therapy and two hours of group skills training every week, in addition to completing regular homework assignments for at least a year), rates of dropout are high, ranging from 24%-58% (Landes, Chalker, & Comtois, 2016; Priebe et al., 2012). Standard DBT is also demanding for providers,

as DBT therapists have to be available to their patients 24/7 for emergency coaching calls, and attend two-hour weekly consultation team meetings. As such, it is extremely difficult to implement standard DBT in public behavioral health systems, which often lack sufficient financial resources and infrastructure to maintain fidelity to the full model (Carmel, Rose, & Fruzzetti, 2014; Reddy & Vijay, 2017).

Cognitive therapy for suicide prevention (CT-SP). The primary focus of CT-SP is on identifying proximal triggers (e.g., patterns of thinking, behavior, and interpersonal interactions) that were activated prior to any previous suicide attempts or crises, and applying CBT strategies to address these triggers. Clients are also assisted in developing more adaptive ways of coping with stressors. The focus on improving coping skills is driven by the notion that a person will likely continue to face stressors, but with more adaptive coping skills these stressors will no longer function as triggers for suicidal behavior (Brown et al., 2005). CT-SP also includes a relapse prevention strategy employed at the end of care, which uses guided imagery and the creation of a hope kit to help patients weather future crises without reverting to suicidal behavior. Unlike DBT, CT-SP can be implemented in as few as 10 sessions, provided on a weekly or biweekly basis.

In an RCT of adults seen in a hospital emergency department following a suicide attempt, Brown and colleagues (2005) examined whether a 10-session CT-SP intervention was superior to enhanced usual care at preventing subsequent suicide attempts. They found clients receiving the CT-SP intervention (n = 60) were half as likely to make a subsequent suicide attempt as those receiving enhanced usual care (n = 60). Additionally, the CT-SP group demonstrated significantly lower levels of depression than the usual care group at 6-, 12-, and 18-month

follow-ups, and significantly less hopelessness than the usual care group at the 6-month post-treatment follow-up (Brown et al., 2005).

Brief Cognitive Behavioral Therapy for Suicide Prevention (BCBT). BCBT is organized into three phases: emotion regulation, cognitive restructuring, and relapse prevention. Progression to each subsequent phase is contingent on the client's mastery of skills from earlier phases (Bryan & Rudd, 2018). The typical length of BCBT is 12 sessions, although the phased model of this intervention allows flexibility for more or fewer sessions, depending on client skill competencies. BCBT also allows clinicians some flexibility within treatment phases to select from a "menu" of prescribed interventions based on the client's specific needs. Generally, the initial treatment session focuses on describing the treatment, conducting a narrative review of the index suicidal episode, teaching about the suicidal mode, and developing a crisis response plan. Subsequent sessions in the first phase of treatment are focused on teaching emotion regulation and crisis management skills. Intervention activities in this first phase of treatment may include sleep optimization, controlled breathing exercises, mindfulness exercises, creation of a reasons for living list, or creation of a "survival kit" containing objects that elicit positive emotions and memories (Bryan & Rudd, 2018). The second phase of BCBT centers on problem-solving and cognitive restructuring of the client's suicidal belief system (Bryan & Rudd, 2018). Intervention activities in this phase of treatment may include development and rehearsal of coping skills and completion of cognitive-behavioral worksheets that help clients understand the antecedents and consequences of their behaviors, challenge distorted thoughts that may be contributing to their distress, identify patterns of problematic thinking, and schedule pleasurable activities. Clients are expected to practice skills between sessions and articulate "lessons learned" from each session to demonstrate mastery. The final phase of BCBT is designed to ensure competence in the arenas of

emotion regulation and cognitive restructuring skills (Bryan & Rudd, 2018). In this phase, the clinician tests the client's ability to solve problems and utilize effective coping strategies while emotionally aroused by taking the client back through the events that led to the current suicidal crisis and having the client articulate ways he or she could have changed the outcome through use of adaptive coping skills. This imaginal rehearsal of a suicidal episode is repeated several times so the client can practice generating several different solutions. BCBT is concluded when the client can successfully complete this relapse prevention task.

Preliminary data from an RCT conducted with active duty military personnel show service members who received BCBT (n = 76) were 60% less likely to make a suicide attempt in the two years following treatment compared to those receiving treatment as usual (n = 76; Rudd et al., 2015). Although thus far BCBT has only been tested with military samples, there is reason to believe it may be applicable in other settings, given its brevity and flexible phased model of delivery.

Collaborative Assessment and Management of Suicidality (CAMS). CAMS is a suicide-specific therapeutic framework that focuses on direct management of suicide risk through collaborative safety planning with the client and their support network. CAMS relies on a multipurpose assessment, treatment planning, tracking, and clinical outcome tool called the Suicide Status Form (SSF) to assess psychological pain, stress, agitation, hopelessness, self-hate, and suicide risk over time. CAMS emphasizes building a strong therapeutic alliance and keeping suicidal clients out of inpatient care if at all possible, given individuals leaving psychiatric inpatient units still have a very high risk of committing suicide following discharge (Large, Sharma, Cannon, Ryan, & Nielssen, 2011).

In a small feasibility-oriented RCT comparing CAMS to enhanced usual care in a group of suicidal outpatients, clients in the CAMS treatment group (n = 11) showed greater reductions in suicidal ideation and distress, and greater increases in optimism and hope, compared to the control group (n = 9; Comtois et al., 2011). Clients receiving CAMS also reported higher treatment satisfaction and demonstrated superior treatment retention in comparison to control clients. In a randomized clinical superiority trial comparing the effectiveness of 16 weeks of CAMS to 16 weeks of DBT for 108 adults with borderline personality traits and a recent suicide attempt, Andreasson and colleagues (2016) found no significant differences in number of self-harm episodes or suicide attempts between the two groups. However, in a larger RCT comparing CAMS (n = 73) to enhanced usual care (n = 75) among U.S. Army soldiers with significant suicidal ideation, Jobes and colleagues (2017) found comparable reductions in suicidal thoughts and suicide-related emergency department admissions across the two groups, suggesting further research is needed to elucidate whether CAMS is truly more effective than treatment as usual.

All of these suicide-specific interventions focus (to varying degrees) on emotion regulation skills training, cognitive restructuring, activity planning, and the development of some type of plan for stabilization. These stabilization-oriented interventions, typically referred to as safety planning or crisis response planning, represent a shift from the traditional use of "no suicide contracts" (Simon, 1999; Weiss, 2001). No suicide contracts, which ask suicidal clients to promise not to engage in self-harm attempts but do not aid in identifying alternative behaviors, have generally been shown to be ineffective (Kelly & Knudson, 2000; Rudd, Mandrusiak, & Joiner, 2006). Instead, safety planning is a collaborative process in which the therapist and the client work together to identify personal warning signs that may signal onset of a suicidal crisis and articulate coping skills, social supports, and professional services the client can rely on to

help them overcome the crisis (Rudd et al., 2006; Stanley & Brown, 2012). Safety planning also involves restricting access to lethal means (Stanley & Brown, 2012). Safety planning has primarily been tested with veterans presenting to emergency departments for a suicidal crisis (e.g., Currier et al., 2015). In one study researchers found that safety planning, when combined with a structured follow-up, was related to increased treatment attendance and decreased hospitalization three months after emergency room discharge (Stanley et al., 2015).

Recently, Bryan and colleagues (2017) published an RCT comparing the effectiveness of treatment as usual, standard crisis response planning (which is very similar to the safety planning intervention described above), and an enhanced crisis response planning intervention that included an additional component designed to clarify patients' reasons for living. They found that both the standard crisis response planning and enhanced crisis response planning interventions were effective at reducing suicide attempts, suicidal ideation, and inpatient hospitalizations among high-risk active duty soldiers, suggesting crisis response planning is worthy of consideration as a stand-alone treatment (Bryan et al., 2017a).

Effective treatments for suicide share several common elements. First, effective treatments are based on theoretical models of suicide risk that are supported by empirical evidence and easily translated to clinical work (Rudd et al., 2009). Broadly, cognitive behavioral therapies for suicide are guided by the understanding that thoughts, emotional processing, and behavioral responses are all interconnected and reciprocally influence one another. Applying a framework such as this and explaining it through psychoeducation can help clients understand why they have tried or are thinking about suicide. Second, treatment is most effective when suicidal thoughts and behavior are a central treatment focus, seen as independent of other symptoms or psychiatric conditions (Tarrier, Taylor, & Gooding, 2008). Third, treatment fidelity

is important. To facilitate treatment fidelity, clinicians are trained to the point of competence with sufficient supervision and follow a clear sequence or hierarchy of treatment targets that is ideally outlined in a standardized treatment manual (Rudd et al., 2009). Fourth, most effective treatments for suicide include specific interventions designed to target poor adherence and motivation and decrease behaviors that interfere with the success of therapy (Rudd et al., 2009). Fifth, most effective treatments have an emphasis on skills-building. For example, DBT is largely focused on helping clients replace maladaptive coping behaviors with more adaptive strategies, like emotion regulation techniques (Linehan et al., 1991). Generally, cognitive-behavioral treatments that emphasize problem-solving, coping skills training, psychoeducation, and emotion regulation are superior to comparison treatments in the reduction of subsequent suicide attempts (Mann et al., 2005; Rudd et al., 2009; Tarrier et al., 2008). This skills-based approach helps give clients a clear conceptualization not only of what is maintaining their problems, but also of what to do to begin to fix them. Sixth, effective treatments for suicide place a large emphasis on self-reliance and self-management. That is, clients assume a high level of responsibility for their own care and are at the helm of managing their response to crises (Rudd et al., 2009). Finally, treatments are most effective at preventing suicidal behavior when they are delivered in settings where care and crisis services are easily accessible. In service of this, every effective suicide treatment includes a clear plan of action for managing emergencies and judicious use of external support services when necessary (Rudd et al., 2009).

Importance of Identification and Treatment of Suicide Risk in Primary Care

Suicidal patients are commonly seen in primary care (Schulberg et al., 2004), with 75% of primary care providers (PCPs) reporting having at least one patient attempt suicide each year (Poma, Grossi, Toniolo, Baldo, & DeLeo, 2011). As mentioned previously, about half of people

who die by suicide visit their PCP within one month of doing so (Ahmedani et al., 2014; Luoma et al., 2002) and about 20% visit their PCP within just one week of taking their life (Younes et al., 2015). In contrast, fewer than one in five people who die by suicide make contact with specialty mental health services in the month prior to their death (Luoma et al., 2002). This pattern of patients with psychological problems seeking primary care services but having relatively little involvement in specialty mental health care is not uncommon (Wang et al., 2005). In fact, primary care has been referred to as the "*de facto* mental health care system" in the United States (Kessler & Stafford, 2008, p. 9). This contrast suggests primary care is an important setting for improving identification and treatment of those at risk for suicide.

However, even when suicidal patients do visit primary care, these visits are often for other concerns and suicide risk frequently goes undetected by PCPs (Verger et al., 2007). Although psychological autopsy studies have demonstrated over 90% of individuals who die by suicide have mental health problems (Cavanagh, Carson, Sharpe, & Lawrie, 2003), Ahmedani and colleagues (2014) found that a mental health diagnosis was absent from the medical charts of over half of patients with completed suicides in the year prior to death, and mental health diagnoses were even less common among disadvantaged groups with lower levels of education and income. Thus, it seems mental health status and suicide risk alike may need to be assessed more thoroughly in general medical settings.

Current Approaches to Management of Suicide Risk in Primary Care

The extant literature offers two main suggestions for improving identification of suicide risk in primary care: (1) educate practitioners about assessment and management of suicide risk (e.g., Appleby et al., 2000; McDowell, Lineberry, & Bostwick, 2011), and (2) improve screening for suicide risk and mood disturbance (e.g., McFaul et al., 2014; Wintersteen & Diamond, 2013).

Practitioner education typically involves training sessions delivered by certified facilitators that focus on assessment of suicide risk, mental state, and psychosocial problems; best practices in managing depression and suicide risk through medication and behavioral strategies; and appropriate referral and follow-up practices (e.g., Appleby et al., 2000; DeHay, Ross, & McFaul, 2015; Morriss et al., 1999). Training methods generally include didactic presentations, written handouts and reference cards, video vignettes demonstrating proper risk assessment, discussion, and role plays with feedback from facilitators. Although educational interventions can improve participants' knowledge of risk factors and warning signs for suicide (McFaul et al., 2014) and increase primary healthcare staff's confidence in assessing and managing suicide risk (Gask, Dixon, Morriss, Appleby, & Green, 2006), they are generally insufficient at reducing rates of completed suicide (Morriss, Gask, Webb, Dixon, & Appleby, 2005) or increasing practitioners' rates of means restriction (i.e., removal of lethal weapons, Morriss et al., 1999).

Screening for depression and suicide risk has also been put forth as an essential component of prevention and intervention programs for suicide in primary care (Bryan et al., 2014; Kelly, Sammon, & Byrne, 2014; Taliaferro et al., 2012). Although several demographic and clinical risk factors for suicide have been identified (e.g., alcohol abuse, hopelessness, previous suicide attempts, social isolation, anxiety, unemployment, chronic medical illnesses; Brown, Beck, Steer, & Grisham, 2000), it is difficult to predict accurately who will die by suicide because of the low base rates of completed suicides in the general population. As such, it is important to ask patients directly about suicidal thoughts and urges in order to improve risk detection. Universal suicide screenings (e.g., McFaul et al., 2014; Wintersteen & Diamond, 2013) cast the widest net and many suicide prevention programs suggest suicide-specific screener questions (i.e., "Do you feel like life is not worth living?", "Are you thinking about

killing yourself?") be integrated into standard practice. Results from one study showed that following implementation of this improved suicide screen, rates of PCPs' inquiries about suicide increased by 219%, and detection of youth reporting a previous history of suicidal ideation increased by 392% (Wintersteen, 2010). Best practices highlight the importance of asking direct, open, and non-judgmental questions about suicide and thoughts of ending one's life, rather than asking vague questions such as, "Have you been thinking about doing anything extreme?" or leading questions such as, "You're not thinking of committing suicide, are you?" (McFaul et al., 2014). In every case, positive screenings for suicidal ideation indicate the need for further risk assessment and, depending on the results, referral for treatment. Importantly, conducting universal suicide screenings in primary care is recommended only if appropriate treatment support options are available, either from behavioral health clinicians in-house or from specialty mental health care providers in the community (McDowell et al., 2011; O'Connor, Whitlock, Beil, & Gaynes, 2009). Overall, it seems screening for suicide risk is a necessary but insufficient component of managing suicide risk in primary care.

The primary focus of most suicide prevention programs in primary care is to improve PCPs' risk assessment skills and offer recommendations for different referral options to consider (e.g., hospitalization, referral for individual therapy), depending on the level of risk (McFaul et al., 2014). Many programs also emphasize the importance of managing underlying depression, either through embedding a mental health professional into the primary care team (Bruce et al., 2004) or through referral to specialty mental health care (McFaul et al., 2014). Unfortunately, most of the evidence for existing suicide prevention and intervention programs in primary care has been from primarily White, elderly samples (e.g., Alexopoulos et al., 2009; Bruce et al., 2004).

Very few studies investigate direct patient-level interventions that specifically target suicide risk in primary care. In fact, in a systematic review of the literature, Gaynes and colleagues (2004) identified only one RCT (Bennewith et al., 2002) of an intervention to reduce suicide in patients presenting in primary care. The intervention was a three-part, one-time intervention with a focus on physician behavior. Specifically, PCPs were mailed letters informing them when patients made a suicide attempt and were also given a letter they could forward to their patients offering to schedule an appointment and providing guidelines on the management of self-harm in the primary care setting. Results from this study revealed only 58% of the PCPs sent letters to their patients and the treatment as usual and intervention groups had similar rates of patient-attempted suicide at 12-month follow-up (Bennewith et al., 2002).

Integrated Care as a Promising Approach to Managing Suicide Risk in Primary Care

Although primary care is typically the first point of contact for individuals needing treatment for mental health issues (Lipscomb, Root, & Shelley; 2004), PCPs are limited in the amount of time they have available to spend with each patient and lack extensive training in mental health diagnosis and treatment (Mitchell, Vaze, & Rao, 2009). A growing body of work suggests integration of mental health professionals into the primary care team is an effective way of addressing a variety of mental health concerns, particularly depression and anxiety (Bridges et al., 2015; Bryan et al., 2012; Corso et al., 2012; Ray-Sannerud et al., 2012). In the most collaborative iteration of team-based care, called primary care behavioral health (PCBH; Robinson & Reiter, 2016), mental health professionals (referred to as behavioral health consultants, or BHCs) work alongside the primary care team under one roof and are available "on demand" to see patients the moment mental health needs are identified (Blount, 1998). This type of team-based care frees up time that PCPs can devote to other patients for physical

concerns and reduces service utilization barriers for patients (Brawer et al., 2011; Bridges et al., 2014).

PCBH differs from traditional mental health care in several ways. First, PCBH takes a population-based approach to care, which contrasts significantly with the case-focused approach of specialty mental health care. Because of this population-based approach to care, behavioral health visits tend to be shorter than traditional therapy appointments (20-30 minutes), and there are fewer visits overall (the modal number of visits is one, and typically patients are not seen for more than four visits; Robinson & Reiter, 2016). This brevity is largely because the primary focus of PCBH is on improving functioning, rather than ameliorating symptoms completely (Robinson & Reiter, 2016). Patients generally meet with a BHC only until they begin to improve; when a clear plan is in place for continued improvement they cease behavioral health visits and continue treatment with their PCP. Additionally, behavioral health visits usually occur in medical exam rooms either immediately preceding or following a patient's appointment with their PCP and are facilitated by a "warm handoff" between the PCP and the BHC. The warm handoff offers greater access to care and earlier identification and targeting of difficulties compared to the traditional referral process to specialty mental health. It also facilitates rapport and increases the likelihood of patients following through with a recommended referral. Indeed, studies have shown that warm handoffs result in follow-up rates as high as 90%, compared to the 20% follow-up rates observed with traditional referrals (Cummings, O'Donohue, & Cummings, 2009).

During the initial visit, BHCs almost always begin with a functional analysis of the patient's presenting concern, followed by brief psychoeducation and demonstration of skills (Robinson & Reiter, 2016). In initial and follow-up visits, BHCs use adapted versions of

evidence-based interventions to help improve functioning, usually based on cognitive-behavioral principles (Bridges et al., 2015; Bryan et al., 2012; Corso et al., 2012; Hunter, Goodie, Oordt, & Dobmeyer, 2009; Ray-Sannerud et al., 2012). Most patients experience significant improvements when treated in PCBH, with more impaired patients showing more rapid gains (Bryan et al., 2012). Improvements can occur by as early as the second visit (Bryan et al., 2012) and endure for years after the episode of care (Ray-Sannerud et al., 2012). In addition, Corso and colleagues (2012) found therapeutic alliance can be easily formed in PCBH despite the rapid pace of the setting and treatment.

While the prevailing belief is that all suicidal patients should ideally be connected with specialty mental health services within one to two weeks of the initial identification of suicide risk (Bryan, Corso, Neal-Walden, & Rudd, 2009; U.S. Air Force, 2011), some have argued patients at mild risk for suicide can be effectively managed in primary care through PCP-BHC collaboration (Schulberg et al., 2004). Of note, referral to specialty mental health care may not always be possible, depending on the patient's circumstances and the geographic location of the clinic. In cases where referral to specialty mental health care is not possible and hospitalization is not required, BHCs need to be ready to conduct a more in-depth risk assessment and provide a safety planning intervention equivalent to what one might receive in specialty mental health care (U.S. Air Force, 2011). Bryan and colleagues (2009) have put forth a set of recommendations for how BHCs might manage suicide risk in integrated PCBH settings based on empirically-supported principles of treatment in traditional care, but the effectiveness of these recommendations has not yet been tested.

There is reason to believe PCBH approaches may hold promise for managing suicide risk in primary care patients. First, the common components of effective suicide treatments identified

by Rudd and colleagues (2009) map quite well onto this model of care. For example, integrated PCBH approaches tend to place an emphasis on skills-building and patients typically have a high level of personal responsibility and involvement in their own care (Robinson & Reiter, 2016). Additionally, PCBH allows patients and providers alike easy access to additional treatment and crisis services (Blount, 1998). For example, the "warm handoffs" utilized in integrated PCBH approaches minimize the likelihood of patients dropping out before receiving treatment. The chronic disease management model of integrated care also fits well with the fluid vulnerability model of suicide risk, in that symptoms are typically not seen as being wholly "cured" within this approach, but rather patients are assisted during times of acute stress and given the tools they need to improve functioning in the moment. Finally, given recent evidence suggesting crisis response planning may be effective as a stand-alone treatment (Bryan et al., 2017a), it seems feasible that suicide risk could be identified and mitigated in as little as one behavioral health visit, depending on the severity.

However, barriers to implementation of suicide-specific interventions in PCBH may exist. For example, it is possible the brief visit duration and smaller number of visits overall in the PCBH model is not well-suited to management of suicidal patients. Additionally, it is possible management of suicidal patients in a PCBH setting could reduce BHCs' availability to receive warm handoffs and address other patient needs, thereby interfering with the flow of patient care. Finally, it is possible PCPs could feel reticent to rely on BHCs for management of suicidal patients, instead preferring to hospitalize them or refer them to specialty care settings. Clearly, more research on the feasibility of implementing suicide-specific interventions in PCBH is needed.

Despite the growing recognition of the role of mental health professionals in primary care (Robinson & Reiter, 2016), and the existence of brief evidence-based therapeutic approaches to reducing suicide risk (e.g., Bryan et al., 2017a), only one study to date (Dueweke, Rojas, Anastasia, & Bridges, 2017) has examined the effectiveness of brief interventions for suicide risk delivered by BHCs in an integrated PCBH setting. In this study, Dueweke and colleagues (2017) completed a retrospective review of first- and last-visit data from 31 consecutive behavioral health patients reporting suicidal or self-harm ideation to explore whether brief behavioral health visits appeared to reduce suicidal and self-harm ideation. Results revealed that patients reported significantly lower frequencies of suicidal and self-harm ideation at their final visit than at their initial visit, and patients whose ideation was targeted directly showed greater improvements than patients whose ideation was targeted indirectly (Dueweke et al., 2017). While preliminary, these results suggest mild to moderate suicidal ideation can be addressed in primary care. However, the study was limited by lack of a standardized treatment protocol, the use of single-item measures of suicidal and self-harm ideation as the outcome measures, and a substantial number of patients failing to attend scheduled follow-up appointments, thereby limiting the researchers' ability to collect first- and last visit data. Given the dearth of effectiveness studies in the field of suicide prevention (Brown & Jager-Hyman, 2014), further research on the implementation of interventions for suicide risk in real-world settings is needed.

Purpose

The present study aimed to evaluate the preliminary outcomes, acceptability, and feasibility of a brief crisis response planning intervention for use by mental health care providers managing suicide risk in a primary care behavioral health (PCBH) setting. I hypothesized that (1) patients would report significant declines in suicidal beliefs and intent, and significant increases

in hope and coping efficacy immediately following the single-session crisis response planning intervention, (2) patients would maintain treatment gains in all four domains (i.e., suicidal beliefs, intent, hope, and coping efficacy) at a 4-month follow-up, (3) patients would experience clinically meaningful declines in suicidal beliefs, as measured by a reliable change index (RCI; Jacobson & Truax, 1991), and (4) the intervention would be seen as acceptable and feasible by patients and BHCs alike.

The current study expanded on preliminary work by Dueweke and colleagues (2017) by: (1) examining a specific protocol for management of suicide risk by BHCs, (2) expanding outcome measures to include items assessing suicidal intent, hope, and coping efficacy and a more nuanced measure of suicidal beliefs, (3) collecting pre- and post-data during the first session to examine within session change, (4) utilizing a prospective instead of retrospective research design, (5) including a planned follow-up to reduce attrition, and (6) asking patients and BHCs about their perceptions of the intervention to assess feasibility and acceptability.

Method

Participants

Participants were 22 adult primary care patients recruited at behavioral health visits by BHCs. Inclusion criteria required that participants demonstrate moderate suicide risk (i.e., active ideation with less than a 50% self-reported chance of attempting suicide in the near future, or otherwise deemed to be at moderate risk by the BHC) and receive at least one behavioral health session including crisis response planning following identification of risk. High risk patients who would be better served in specialty mental health care or required immediate hospitalization were not allowed to participate in the study and instead were referred to such facilities. Patients presenting with suicidal ideation in the context of active psychosis were also ineligible for

participation. A subsample of these 22 patients (n = 16) have participated in the 4-month follow-up interview thus far, during which they were invited to describe their experiences of the intervention in greater detail. There were no demographic differences between the full sample and the subsample of patients who participated in the 4-month follow-up interview. Table 2 describes participant demographics.

Procedures

Design. The present study utilized a non-concurrent design, as data collection and treatment began the moment an eligible patient was seen by behavioral health. I considered the possibility of utilizing a multiple baseline design; however, per the PCBH model of care, treatment must start as soon as a need is identified. Particularly in the case of moderate suicide risk, it would not be ethical to delay treatment in order to collect baseline symptoms measures. I also considered the possibility of random assignment to either treatment as usual or another intervention to maximize confidence that any improvements observed would be due to the treatment being delivered, rather than external factors. However, random assignment to treatment as usual would be problematic because most BHCs already do crisis response planning as part of usual care at the clinics included in the present study. Random assignment to an intervention other than crisis response planning (e.g., supportive listening) also presents an ethical dilemma, as crisis response planning already has an evidence base in other settings, and offering a treatment that is other than standard quality of care to patients presenting with moderate suicide risk would be inappropriate.

Setting. Data collection took place at four primary care clinics in Northwest Arkansas. Three of the clinics, Community Clinic – Springdale, Community Clinic - Rogers, and Community Clinic – Siloam Springs, are part of a Federally Qualified Health Center (FQHC)

serving mostly low-income, uninsured, and Latinx patients. These clinics provide primary medical care with full-time integrated behavioral health services. Between 8-10% of patients seen in these clinics are referred for behavioral health services during a given year. The three Community Clinic locations are centrally located within their respective service areas and are accessible on common bus routes or within reasonable walking distance to many patients who reside in the neighborhoods surrounding the clinics.

The fourth clinic, Pat Walker Health Center, is part of the university health center at the University of Arkansas, and provides primary medical care with part-time integrated behavioral health services. A majority of the patients (81%) seen at this location are students at the university. Roughly 2% of patients seen at Pat Walker Health Center are referred for behavioral health services during a given year. See Table 3 for a more detailed demographic breakdown of the four study sites.

Clinicians. Five BHCs (80% female, 100% White) assisted with data collection for the present study. One of the BHCs was a full-time licensed clinical social worker, while the other four were doctoral trainees in clinical psychology. The clinical psychology doctoral trainees had all taken courses in clinical science, clinical practice, psychotherapy, psychotherapy outcomes, and assessment, and at minimum had two full semesters of assessment and intervention practica prior to working in primary care. All BHCs collecting data for this study participated in a two-hour training on the brief suicide prevention protocol. I conducted the training, with support from Dr. Bridges. Training included explanation of best practices for suicide risk assessment and management, explicit instruction in the study protocol and relevant forms, and role plays demonstrating how to apply the protocol with a suicidal patient. Furthermore, I met individually with each BHC after they had run their first participant through my study to discuss potential

pressure points, modifications, and need for additional training. Dr. Bridges also met with BHCs to discuss every participant they enrolled in my study, both via telephone consultation in the moment, and as part of her weekly clinical supervision of these clinicians. Finally, Dr. Bridges and I provided follow-up reminders and trouble shooting at monthly behavioral health meetings and were also available for *ad hoc* supervision and consultation throughout the project duration. This helped ensure treatment integrity and ethical management of patient risk.

Informed consent. All study procedures were approved by the University of Arkansas Institutional Review Board and the executive directors of the university health center and the FQHC housing the three community clinic study sites (see Appendix A for research compliance approval). As part of standard operating procedures, patients of all of the study clinics sign a patient consent form, updated annually, that specifies information in the patient's medical chart and notes from the patient visits may be used for research and program evaluation purposes. Before participating, eligible participants were informed of the nature of the study. Specifically, patients were informed they would be answering questions about their thoughts, emotions, and behaviors, in particular their thoughts and feelings about suicide. They were also informed they were free to stop participating at any time if they felt uncomfortable. It was explained there would be no negative consequences for them if they chose not to participate or if they discontinued participation at any time, and they would be paid in a manner commensurate with their time in the study ($10 for completion of pre- and post-visit measures during initial behavioral health visit, $10 for completion of follow-up measures). The BHCs also discussed limits to confidentiality during the informed consent process, highlighting the potential need to alert others if the patient were to indicate intent to harm him- or herself during the course of treatment (see Appendix B for consent form).

Consenting participants gave responses to pre-treatment measures, received a crisis response planning intervention from a BHC, filled out post-treatment measures, and were scheduled for follow-up appointments. Treatment continued as long as was clinically indicated. Four months after the single-session crisis response planning intervention, participants were contacted via telephone and asked to complete follow-up measures. Figure 5 details participant enrollment.

Screening. All patients referred to behavioral health were asked about frequency of suicidal ideation during their appointment, after a brief review of the referral problem. Although the study BHCs were encouraged to tailor the script to fit their unique clinical "voice," they generally used the following prompt to assess for suicidal ideation: "Many times when people feel this way or have problems like these, they also think about death or have thoughts about suicide. In the past month, have you wished you were dead or wished you could go to sleep and not wake up? In the past month, have you actually had any thoughts about killing yourself?" If the patient responded "yes" to the second question about active suicidal ideation, the BHC followed up with a more in-depth risk assessment to determine the patient's level of risk and appropriateness for participation in the study (see Appendix C for suicide risk assessment and eligibility screener).

Assessment. Patients who endorsed active suicidal ideation received an in-depth risk assessment utilizing items from the Columbia – Suicide Severity Rating Scale (C-SSRS; Posner et al., 2011) with additional questions consistent with the recommendations of the Suicide Prevention Toolkit for Rural Primary Care Practices included (Western Interstate Commission for Higher Education [WICHE], & Suicide Prevention Resource Center [SPRC], 2009). Specifically, this risk assessment went on to ask about risk factors such as previous suicide

attempts, family history of suicide, social isolation, perceived burdensomeness, and precipitating events that may have led to the current crisis. The risk assessment also included questions about duration and intensity of ideation, worst-point ideation, intent, plan, access to means, and current coping strategies and protective factors. To maximize ease of use and adherence to a standardized risk assessment protocol, I created a risk assessment tool utilizing Qualtrics, an online survey software company. All BHCs were provided with a link to the risk assessment tool, and were instructed to utilize the online survey to guide their risk assessment and take notes on participant responses (Appendix D).

If a patient was deemed to be at a moderate level of risk, the BHC described the study briefly and asked the patient if they wished to participate. Generally moderate risk was defined as endorsement of active suicidal ideation with less than 50% intention of acting on these thoughts; however, BHCs were also instructed to use their clinical judgment and make a decision about risk level in consultation with Dr. Bridges. If the patient agreed, the BHC continued with the study protocol, which involved administration of the Suicide Cognitions Scale – Short Form (SCS-S; Bryan et al., 2017b; Appendix E) followed by collaborative creation of a crisis response plan (Appendix F). Throughout creation of the crisis response plan, BHCs were instructed to ask patients about their confidence that the strategies detailed in each section (e.g., coping strategies, distractions) would be effective at reducing suicide risk. The crisis response plan worksheet for the current study was created by modifying Stanley and Brown's (2012) safety planning template to include a section about reasons for living, as well as additional spaces for participant responses and questions about efficacy within each individual section (Appendix F). After the crisis response planning intervention, patients completed post-visit measures including the SCS-S (Bryan et al., 2017b) and the modified A Collaborative Outcomes Resource Network

Questionnaire (ACORN; Brown, Simon, Cameron, & Minami, 2015; Appendix G). If the patient did not agree to participate, they still continued to receive treatment as clinically indicated which, in most cases, included receiving collaborative crisis response planning but excluded completion of study measures.

Treatment protocol. All patients participating in the study received an in-depth risk assessment and worked with the BHC to collaboratively create a crisis response plan in their initial visit. Patients were given a copy of their individualized crisis response plan to take home at the end of the first visit. A copy was also scanned and uploaded to their electronic medical record. Upon completion of the initial visit, patients were scheduled for follow-up visits as necessary, and continued to receive treatment as long as clinically indicated. However, I know from prior experience with data collection in these clinics that patients do not always come to scheduled follow-up appointments (Dueweke et al., 2017). We attempted to increase likelihood of follow-up by providing one reminder call prior to scheduled appointments, and calling patients to check in and reschedule if they no-showed their follow-up appointment. Regardless, creation of the crisis response plan took place in the initial visit in case patients did not return, as it has been shown to be effective as a stand-alone treatment delivered in as little as one session (Bryan et al., 2017a). Patients returning to subsequent behavioral health visits received interventions focused on re-assessing risk and use of the crisis response plan, as well as learning new skills related to emotion regulation, cognitive restructuring, and behavioral activation. Attendance of subsequent behavioral health visits and skills reviewed in these visits were coded.

All screenings, assessment, and treatment sessions were conducted at Community Clinic – Springdale, Community Clinic – Rogers, Community Clinic – Siloam Springs, or Pat Walker Health Center. All four clinics had medical and mental health staff available to provide required

assistance in case of any adverse events. There are several local crisis centers and hospitals located within 20 miles of these four clinics, some less than one mile away. If at any point in the course of assessment or treatment a patient was identified as being at a high risk for suicide or imminent harm to his- or herself (i.e., resolved plans and preparation, access to means, poor social support, poor judgment), the BHCs were instructed to take steps to ensure the patient received adequate care. The protocols for management of high risk patients differ slightly between the Community Clinic locations and Pat Walker Health Center. At the Community Clinics, it is largely the BHC's responsibility to get the patient into inpatient care. This generally involves the following steps: 1) contacting a clinical supervisor to consult; 2) having the patient fill out a Release of Information form allowing the BHC to call the local emergency department or inpatient unit and make arrangements/alert them to the patient's arrival; 3) arranging for immediate, supervised transportation of the patient; and 4) staying with the patient until help arrives. All Community Clinic BHCs had access to a written copy of their clinic's emergency protocol, which included contact information for several local emergency departments and inpatient units. At Pat Walker Health Center, high risk patients are taken directly to the suicide crisis team at the University Counseling and Psychological Services (CAPS) clinic. Clinicians on this suicide crisis team employ evidence-based measures for assessing and managing suicide risk, up to and including facilitating hospitalization.

Debriefing and follow-up. Roughly four months after the single-session crisis response planning intervention, I contacted participants via telephone, asked them to complete a follow-up interview, and debriefed them as to the purpose of the study. Patients who were unable to attend an in-person follow-up appointment completed the follow-up interview over the phone. During the follow-up interview I administered all study measures, including the modified C-SSRS

(Posner et al., 2011), the single-item measures of hope, efficacy, and intent, the SCS-S (Bryan et al., 2017b), and the modified ACORN (Brown et al., 2015). I also asked participants a number of open-ended questions about their perceptions of the crisis response planning intervention. During the initial consent process, participants agreed that if they were to report clinically significant depression or suicide risk during the follow-up interview, I would request they attend an appointment with behavioral health at the clinic or another mental health facility or hospital, and that if they were to fail to follow through with a scheduled appointment, I would call the police to check on their well-being. Following completion of the follow-up appointment, all participants were given their final payment, fully debriefed as to the purpose of the study, and given the opportunity to learn the results of the study following data analysis and write-up. Four of the follow-up interviews with patients were conducted in person, the remainder were conducted by telephone. Interviews lasted between 12 and 80 minutes ($M_{duration}$ = 35.88 minutes). Interviews were not audio recorded; instead, I took concurrent notes on participants' responses while conducting each interview.

BHC interviews. At the end of the study period, I also contacted the BHCs who had provided the crisis response planning intervention and asked them to participate in a voluntary interview regarding their perceptions of the intervention. During this interview, I asked the BHCs several open-ended questions about their impressions of the acceptability and feasibility of delivering the crisis response planning intervention in a PCBH setting (Appendix H). Interviews with BHCs were all conducted by telephone, and lasted between 33 and 49 minutes ($M_{duration}$ = 38.67 minutes). Interviews were not audio recorded; instead, I took concurrent notes on participants' responses while conducting each interview.

Confidentiality of data. Each participant was assigned a unique ID number. Participant identifying information and ID numbers were stored in a password protected file on the principal investigator's (PI's) computer and were accessible only by the PI and coinvestigators. All hard copies of administered measures were stored in a locked file cabinet in the PI's laboratory and shredded once they were entered into the password protected computer file. Risk assessment data stored on Qualtrics was protected using Transport Layer Security (TLS) encryption for all transmitted data, and Qualtrics is FedRamp authorized. In addition, Qualtrics' services are hosted by trusted data centers that are independently audited using the industry standard SSAE-16 method. Patient medical records are housed in closed network electronic medical systems managed by specialized technicians at Community Clinic and Pat Walker Health Center. Access to these records is only granted by technicians once people have been approved by the clinic administrators and undergone a HIPAA training to ensure protection of confidentiality. Furthermore, Community Clinic and Pat Walker Health Center monitor all patient records and activities of people accessing records and can therefore detect breaches in confidentiality or unauthorized access to aspects of the records that are not pertinent to that provider. Different levels of access to records also helps ensure patient health information remains confidential.

Measures

Study measures were carefully selected for their psychometric properties and brevity, appropriate for the primary care setting. A list of measures and time points at which each was administered to patients is presented in Table 4.

Demographics. Demographic information was extracted from participating patients' electronic medical records.

Columbia-Suicide Severity Rating Scale (C-SSRS; Posner et al., 2011). The C-SSRS is a clinician-administered scale designed to assess and quantify the domains of suicidal ideation and suicidal behavior. Four constructs are measured: severity of ideation, intensity of ideation, suicidal behavior, and lethality of previous attempts. The severity of ideation subscale is rated on a 5-point ordinal scale in which 1 = *wish to be dead*, 2 = *nonspecific active suicidal thoughts*, 3 = *suicidal thoughts with methods*, 4 = *suicidal intent*, and 5 = *suicidal intent with plan*. The intensity of ideation subscale comprises 5 items assessing frequency, duration, controllability, deterrents, and reasons for ideation, each rated on a 5-point ordinal scale. The suicidal behavior subscale is rated on a nominal scale that includes actual, aborted, and interrupted attempts, preparatory behavior, and nonsuicidal self-injury. The lethality subscale is rated on a 6-point ordinal scale; if actual lethality is zero, potential lethality of attempts is rated on a 3-point ordinal scale. The C-SSRS has demonstrated good convergent validity with other suicidal ideation and behavior scales (i.e., the Scale for Suicide Ideation [SSI; Beck, Kovacs, & Weissman, 1979], the suicide items on the Beck Depression Inventory [BDI; Beck, Ward, & Mendelson, 1961] and the Montgomery-Åsberg Depression Rating Scale [MADRS; Montgomery & Asberg, 1979]) and divergent validity with somatic depression items on the BDI and the MADRS (Posner et al., 2011). It has also demonstrated adequate internal consistency reliability (Cronbach's alpha for intensity subscale = .94; Posner et al., 2011). The subscales of the C-SSRS related to severity and intensity of suicidal ideation were administered by the BHC in interview format as part of the risk assessment portion of the behavioral health visit (see Appendix D). Items from the C-SSRS were also administered during the 4-month follow-up interview.

Suicide Cognitions Scale – Short Form (SCS-S; Bryan et al., 2017b). The SCS-S consists of nine items assessing a person's suicide-specific beliefs about their current problems.

Items assess three dimensions of suicidal thinking (i.e., unlovability, unbearability, and unsolvability) and are rated on a 5-point Likert scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*). An example item is, "I don't deserve to live another moment." The SCS-S is scored by summing ratings across items, resulting in a range of possible scores from 9 to 45, with higher scores reflecting greater endorsement of suicidal thinking. This measure has demonstrated good convergent validity with the full version of the SCS and the SSI (Bryan et al., 2017b), and divergent validity with the Posttraumatic Stress Disorder Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993) and the Pain Catastrophizing Scale (PCS; Sullivan, Bishop, & Pivik, 1995). This measure has also demonstrated adequate internal consistency reliability (Cronbach's alphas > .85 for all three subscales, Bryan et al., 2017b). The SCS-S was administered pre- and post-treatment at the initial behavioral health visit for participating patients, and was also administered at the 4-month follow-up point.

A Collaborative Outcomes Resource Network Questionnaire (ACORN; Brown et al., 2015). The ACORN is a self-report questionnaire given at every behavioral health visit as part of standard care. The standard questionnaire includes 14 items assessing the frequency of some of the most commonly reported thoughts, feelings and behaviors among adults seeking behavioral health treatment (e.g., "In the past two weeks, how often did you feel unhappy or sad?"). Response choices range from 0 (*never)* to 4 (*very often)*. Scores on this measure can be averaged to form a global distress score, with higher scores indicating more distress. This measure has adequate psychometric properties and construct validity (Cronbach's alpha = .91; Brown et al., 2015). The average ACORN score for people currently in treatment is 2.07 (*SD* = 0.78), and the ACORN manual specifies that benchmarks for clinically meaningfully improvement are a Cohen's *d* of 0.50 or greater (Brown et al., 2015).

For the present study, this questionnaire was modified to include additional items assessing passive suicidal ideation (i.e, “In the past two weeks, how often did you have thoughts that you would be better off dead?”), active suicidal ideation (i.e., “In the past two weeks, how often did you actually have any thoughts of killing yourself?”), suicidal intent (i.e., “What is the percent likelihood you will attempt suicide in the next few weeks?”), hope (i.e., “How much hope do you have that things will get better?”), and coping efficacy (i.e., “How confident are you that you can handle the way things are right now?”). Participating patients filled out the modified ACORN at the end of their initial behavioral health visit, at each follow-up visit, and during the 4-month follow-up interview.

Practice Components Checklist. After participants completed the 4-month follow-up interview, members of the research team accessed visit notes for study participants to codify a) how many behavioral health visits each patient had attended between the initial study visit and the follow-up interview, and b) which practice components the BHC had delivered during behavioral health visits following the initial study visit (Appendix I).

Attendance of Follow-up Appointments. Patient attendance of follow-up appointments was codified, though the primary study analyses focus only on the crisis response planning intervention delivered in the initial behavioral health visit.

Patient Perceptions of Crisis Response Planning Intervention. To assess for patient perceptions of the crisis response planning intervention, I asked participants a number of open-ended questions during the 4-month follow-up interview. These questions included, “What do you remember about the safety planning intervention you completed with the clinician during your first visit?” “What, if anything, did you find most helpful about that visit?” and, “What, if anything, did you find unhelpful about that visit?” After responding to these three open-ended

questions, participants were also asked to reflect on the initial study visit and indicate whether they agreed with the following statements: “I learned how to identify the onset of a suicidal crisis,” “I learned better coping strategies for how to deal with a suicidal crisis,” “I felt more hopeful about the future,” “I felt more confident that I could handle suicidal crises” and, “I appreciated the opportunity to talk to somebody about my problems.” Participants were also allowed to give spontaneous feedback about their experience of the crisis response planning intervention after being debriefed as to the purpose of the study. Thus far, 16 of the original 22 participants have participated in the follow-up interview.

BHC Perceptions of Crisis Response Planning Intervention. To assess acceptability and feasibility of the intervention, I also asked the BHCs who had provided the crisis response planning intervention a number of open-ended questions at the end of the study period. These questions are outlined in Appendix H.

Analytic Strategy

Prior to hypothesis testing, I examined descriptive statistics and statistical assumptions (e.g., normality, homogeneity of variance) for all study variables. All study variables fell within the acceptable range of normality with the exception of suicidal intent, which was positively skewed and kurtotic at all three time points. As such, I transformed the suicidal intent variable using a logarithmic transformation. Although the pattern of results is the same across analyses using the transformed and untransformed intent variables, results related to suicidal intent are reported in both their transformed and untransformed state.

For my first hypothesis, I used paired-samples t-tests to examine the difference between pre- and post-crisis response planning intervention scores on the SCS-S and the single-item measures of hope, efficacy, and suicidal intent. For my second hypothesis, I used within-subjects

repeated measures ANOVAs to examine the difference between pre-intervention, post-intervention, and 4-month follow-up scores on the SCS-S and the single-item measures of hope, efficacy, and suicidal intent. These analyses were repeated with the inclusion of number of total sessions attended as a covariate. For my third hypothesis, I intended to calculate reliable change indices (RCIs; Jacobson & Truax, 1991) for the differences in SCS-S scores. However, because SCS-S scores did not evidence significant declines within session or across time, I did not calculate RCIs.

For my fourth hypothesis, I utilized an inductive approach to explore general themes in patients' and BHCs' responses to the open-ended questions. More specifically, I used thematic analysis in line with procedures outlined by Braun and Clarke (2006). Given the exploratory nature of these analyses, and the fact that I will not be trying to replicate my findings from these interviews with other patient samples, I served as the sole coder. First, I became familiar with the participants' responses. Specifically, I conducted all of the follow-up interviews with patients and BHCs and took concurrent notes on participants' responses that I typed into an excel file, which helped me formulate initial impressions of participants' feedback. Next, I generated codes for participant responses. I utilized an open coding approach, meaning I did not have pre-set codes in mind, but rather developed and modified the codes as I worked through the coding process. I then collated these codes into preliminary themes. After identifying preliminary themes, I went back and re-read the data associated with each theme, and considered whether the data supported it. I also considered whether all of the themes I had identified were coherent and distinct from one another. Finally, I defined the essence of each theme, and wrote up my findings.

Power Analysis. Studies vary in estimates of the effectiveness of suicide intervention strategies, from medium to large effect sizes for reducing ideation with intensive treatment to small effect sizes for reducing frequency of repeat suicide attempts with brief treatment (for a review, see Gaynes et al., 2004). In addition, brief behavioral health interventions for other mental health concerns (i.e., depression, anxiety) show medium effect sizes for effectiveness over approximately two visits (Bridges et al., 2015). A power analysis indicated that, to detect a medium effect size using a paired-samples t-test (Cohen's $d = 0.5$, $\alpha = .05$, power = .80), a total of 34 people would be needed. To detect a medium effect size using a repeated measures ANVOA with three time points, (partial $\eta^2 = 0.06$, $\alpha = .05$, power = .80), a total of 27 people would be needed. When relying on telephone contact for follow-up measures in this setting, we have had a participation rate of roughly 75% (Gomez, 2017). Therefore, enrolling 36 participants in the initial study visit would allow for adequate power to detect a medium effect at follow-up, accounting for attrition (i.e., 36*.75 = 27).

Although I aimed for a sample size of 36 people, time constraints and a limited number of participating BHCs restricted my ability to obtain the desired sample size. The sample size I have achieved during study enrollment thus far, excluding participants who did not provide complete pre-post data, suggests I was adequately powered to detect effects of a large magnitude (i.e., $d = 0.81$ for t-tests and partial $\eta^2 = 0.15$ for ANOVAs). Because many of the analyses in the present study were underpowered, interpretation of effect sizes and descriptive data should take precedent over statistical significance. Effect sizes smaller than Cohen's $d = 0.2$ will be considered negligible, those between $d = 0.2$ and 0.5 will be considered small, those between $d = 0.5$ and 0.8 will be considered medium, and those greater than $d = 0.8$ will be considered large. Similarly, effect sizes smaller than partial $\eta^2 = 0.01$ will be considered negligible, those between

partial $\eta^2 = 0.01$ and 0.06 will be considered small, those between partial $\eta^2 = 0.06$ and 0.14 will be considered medium, and those greater than partial $\eta^2 = 0.14$ will be considered large.

Results

Descriptives

Participating patients ranged in age from 18 to 53 years (M = 25.91, SD = 8.83) and were primarily female (72.7%) and White (72.7%). Roughly 60% of participants were receiving behavioral health services at Pat Walker Health Center, while the remaining participants were evenly divided across the three Community Clinic study sites. Half of the participants reported a history of at least one prior suicide attempt. The most commonly reported methods for past attempts included overdosing on pills (n = 6), hanging (n = 2), and cutting wrists (n = 2). At the time of study enrollment, most participants reported active suicidal ideation with varying degrees of thought as to possible methods for completing suicide. One participant only endorsed passive suicidal ideation, but was determined to be at moderate risk and in need of a crisis response plan because of self-reported alcohol abuse and endorsement of a previous suicide attempt. The most commonly reported reasons for considering suicide were to stop bad feelings (n = 19), feeling like a burden on loved ones (n = 17), self-hatred (n = 14), and hopelessness (n = 14). Table 2 describes participant demographics in greater detail.

Although BHCs were prepared to hospitalize high risk patients, none of the people screened for the present study required immediate hospitalization. All of the study participants were scheduled for at least one follow-up appointment after creation of the crisis response plan; 17 out of 22 (77.3%) of them attended at least one follow-up appointment and 10 out of 22 (45.5%) of them attended all of the follow-up appointments scheduled in their episode of care (ranging from 1 to 10 appointments). Of note, this “treatment completion” rate exceeds rates

generally seen in PCBH settings, which tend to fall between 28 and 40% (Bridges et al., 2014; Corso et al., 2012). Follow-up appointments consisted primarily of assessing for changes in risk, checking in on patients' use of the crisis response plan, psychoeducation, behavioral activation, cognitive restructuring, relaxation skills, and supportive listening. If patients did not attend the first scheduled follow-up visit after creation of the crisis response plan, BHCs followed up with them by telephone or secure messaging to re-assess risk and ensure they were okay.

Eighteen of the 22 participating patients have reached the 4-month follow-up time point. Of these, one person did not wish to participate in the follow-up interview and one was unable to be reached. As such, 16 people have participated in the follow-up interview thus far. During the 4-month follow-up interview, 15 out of 16 participants (93.8%) reported a decrease in the severity of their worst-point suicidal ideation within the past month, and 10 out of 16 (62.5%) reported they had not experienced any suicidal ideation within the past month (Table 5). None of the 16 participants reached for follow-up had made a suicide attempt since the crisis response planning intervention. One participant was deemed to be at moderate risk for suicide during the follow-up interview; as such, she was referred back to behavioral health services. She re-initiated care with her previous BHC, during which she and her BHC updated her crisis response plan, discussed means restriction and coping, and continued to meet for regularly scheduled follow-up appointments.

Preliminary Outcomes

Within Session Change.

***Suicidal Cognitions*.** A paired-samples t-test was conducted to compare suicidal cognitions immediately after the safety planning intervention to suicidal cognitions immediately before the intervention. There was not a significant difference in the scores at post-test (M =

26.40, *SD* = 7.91) compared to the scores at pre-test (*M* = 26.67, *SD* = 9.19), *t* (14) = 0.20, *p* = .842, Cohen's *d* = 0.05. Interpretation of Cohen's *d* suggests the safety planning intervention did not reduce suicidal cognitions within session.

Suicidal Intent. A paired-samples t-test was conducted to compare suicidal intent immediately after the safety planning intervention to suicidal intent immediately before the intervention. There was not a significant difference in self-reported intent at post-test (*M* = 14.07, *SD* = 16.19) compared to self-reported intent at pre-test (*M* = 20.93, *SD* = 22.39), *t* (13) = 0.92, *p* = .375, Cohen's *d* = 0.25. Re-running this analysis with the log-transformed intent variable produced a similar result; there was not a significant difference in log-transformed intent at post-test (*M* = 1.83, *SD* = 1.58) compared to log-transformed intent at pre-test (*M* = 2.49, *SD* = 1.26), *t* (13) = 1.44, *p* = .174, Cohen's *d* = 0.38. Interpretation of Cohen's *d* suggests the safety planning intervention had a small effect on suicidal intent within session.

Hope. A paired-samples t-test was conducted to compare self-reported hope immediately after the safety planning intervention to self-reported hope immediately before the intervention. There was not a significant difference in self-reported hope at post-test (*M* = 3.29, *SD* = 0.91) compared to self-reported hope at pre-test (*M* = 3.29, *SD* = 0.99), *t* (13) = 0.00, *p* = 1.00, Cohen's *d* = 0. Interpretation of Cohen's *d* suggests the safety planning intervention did not increase hope within session.

Coping Efficacy. A paired-samples t-test was conducted to compare self-reported coping efficacy immediately after the safety planning intervention to self-reported coping efficacy immediately before the intervention. There was not a significant difference in self-reported coping efficacy at post-test (*M* = 3.14, *SD* = 0.95) compared to self-reported coping efficacy at pre-test (*M* = 3.36, *SD* = 1.15), *t* (13) = 0.68, *p* = .512, Cohen's *d* = -0.19. Interpretation of

Cohen's *d* suggests the safety planning intervention did not increase coping efficacy within session.

Maintenance of Gains at Follow-up. Because only 16 participants have participated in the follow-up interview thus far, the following analyses represent a reduced sample of participants who provided data at all three time points. Therefore, the means in the subsequent analyses differ slightly from the means reported in the paired samples t-tests above.

Suicidal Cognitions. A one-way repeated measures ANOVA was conducted to compare the effect of time on suicidal cognitions immediately before, immediately after, and four months after the safety planning intervention. There was not a significant effect of time on suicidal cognitions, Wilks' Lambda = .82, F (2, 9) = 1.02, p = .399. However, interpretation of partial η^2 (0.19) suggests a large effect. See Figure 6 for estimated marginal means of suicidal cognitions scores across time. Re-running this ANOVA with number of follow-up behavioral health visits attended included as a covariate did not change the pattern of results or the estimated marginal means.

Suicidal Intent. A one-way repeated measures ANOVA was conducted to compare the effect of time on suicidal intent immediately before, immediately after, and four months after the safety planning intervention. There was a significant effect of time on suicidal intent, Wilks' Lambda = .34, F (2, 7) = 6.92, p = .022. Interpretation of partial η^2 (0.66) suggests a large effect.

Three paired samples t-tests were used to make post hoc comparisons between time points. A first paired samples t-test indicated there was not a significant difference between self-reported intent at pre-test (M = 27.78, SD = 24.38) and at post-test (M = 13.89, SD = 16.91), t (8) = 1.31, p = .679. A second paired samples t-test indicated there was not a significant difference between self-reported intent at post-test (M = 13.89, SD = 16.91) and at follow-up (M = 8.89, SD

= 24.85), t (8) = 0.44, p = 1.00. A third paired samples t-test indicated there was a significant difference between self-reported intent at pre-test (M = 27.78, SD = 24.38) and at follow-up (M = 8.89, SD = 24.85) t (8) = 3.84, p = .015. See Figure 7 for estimated marginal means of suicidal intent across time.

Re-running this analysis with the log-transformed intent variable produced a similar result; see Figure 8 for estimated marginal means of the logarithmic transformation of suicidal intent across time. Re-running these ANOVAs with number of follow-up behavioral health visits attended included as a covariate did not change the pattern of results or the estimated marginal means, but it did make the omnibus effect of time non-significant.

Hope. A one-way repeated measures ANOVA was conducted to compare the effect of time on self-reported hope immediately before, immediately after, and four months after the safety planning intervention. There was a significant effect of time on self-reported hope, Wilks' Lambda = .50, F (2, 9) = 4.50, p = .044. Interpretation of partial η^2 (0.50) suggests a large effect.

Three paired samples t-tests were used to make post hoc comparisons between time points. A first paired samples t-test indicated there was not a significant difference between self-reported hope at pre-test (M = 3.27, SD = 1.10) and at post-test (M = 3.55, SD = 0.82), t (8) = 1.15, p = .830. A second paired samples t-test indicated there was not a significant difference between self-reported hope at post-test (M = 3.55, SD = 0.82) and at follow-up (M = 4.55, SD = 0.69), t (8) = 2.80, p = .056. A third paired samples t-test indicated there was a significant difference between self-reported hope at pre-test (M = 3.27, SD = 1.10) and at follow-up (M = 4.55, SD = 0.69) t (8) = 3.13, p = .032. See Figure 9 for estimated marginal means of hope scores across time. Re-running this ANOVA with number of follow-up behavioral health visits attended

included as a covariate did not change the pattern of results or the estimated marginal means, but it did make the omnibus effect of time non-significant.

Coping Efficacy. A one-way repeated measures ANOVA was conducted to compare the effect of time on self-reported coping efficacy immediately before, immediately after, and four months after the safety planning intervention. There was not a significant effect of time on self-reported coping efficacy, Wilks' Lambda = .76, F (2, 9) = 1.43, p = .290. Interpretation of partial η^2 (0.24) suggests a large effect. See Figure 10 for estimated marginal means of coping efficacy scores across time. Re-running this ANOVA with number of follow-up behavioral health visits attended included as a covariate did not change the results or the estimated marginal means.

Does Strength of Crisis Response Plan Relate to Change? In addition to the primary analyses, I was also interested in exploring whether the strength of the crisis response plans patients created was associated with observed change within-session and across time. To examine this, I first calculated a composite strength score for each crisis response plan by multiplying the number of items within each section of the plan by the participant's ratings of their confidence in the efficacy of that section (e.g., number of coping strategies listed x confidence that utilizing listed coping strategies will help), and averaging the strength scores for all of the sections of the crisis response plan. I then calculated pre-post and pre-follow-up change scores for all of the outcomes of interest for each participant. I examined the relationship between the overall strength of the crisis response plan and change in suicidal intent, hope, and coping efficacy within-session and across time using bivariate correlations.

There was a medium positive correlation between the overall strength of the crisis response plan and within session change in suicidal intent, r = .31, p = .281. There was also a large positive correlation between the overall strength of the crisis response plan and within

session change in coping efficacy, $r = .62$, $p = .019$. Finally, there was a small to medium positive correlation between the overall strength of the crisis response plan and within session change in hope, $r = .23$, $p = .423$. These findings suggest the strength of each patient's crisis response plan was positively associated with their treatment gains within session, and that the strength of the crisis response plan had the strongest relationship with changes in coping efficacy. See Table 6 for a more detailed breakdown of correlations between strength of individual crisis response plan sections and within-session change.

There was a small positive correlation between the overall strength of the crisis response plan and change in suicidal intent across time, $r = .13$, $p = .663$. There was also a small positive correlation between the overall strength of the crisis response plan and change in coping efficacy across time, $r = .17$, $p = .531$. Finally, there was a medium negative correlation between the overall strength of the crisis response plan and change in hope across time, $r = -.37$, $p = .165$. These findings suggest the strength of each patient's crisis response plan was not as strongly associated with their treatment gains across time, although the strength of the crisis response plan still had the strongest relationship with changes in coping efficacy. See Table 6 for a more detailed breakdown of correlations between strength of individual crisis response plan sections and change across time.

Acceptability and Feasibility

Patient Perceptions of the Intervention. Table 7 presents all thematic categories I identified from the follow-up interview about patients' perceptions of the safety planning intervention, with their relative frequencies of endorsement. Below is a more detailed description of the thematic categories that emerged, along with exemplar responses. Themes are presented in order of relative frequency of endorsement, from most to least commonly endorsed.

Recall of the intervention. Participants' comments about what they remembered from the intervention fell into three major themes: (1) safety plan components, (2) emotional reactions, and (3) characteristics about the behavioral health consultant.

Safety plan components. All participants (n = 16) mentioned remembering creation of the safety plan, or elaborated on one or more of the specific components of the safety plan (e.g., identifying warning signs, coping strategies, distractions, people to talk to, means restriction, reasons for living) as something that was memorable to them. For example, one person remembered identifying people he could talk to during a suicidal crisis, and discussing reasons for living:

> "*We made a list of things that would be beneficial to stop me from actually killing myself. We wrote down friends I could call, things that are worth living for, that type of stuff."* (21-year-old White male, Pat Walker Health Center)

Emotional reactions. Some participants (n = 4) mentioned something about their own emotional reaction to the creation of the safety plan (e.g., relief that they were not being hospitalized, surprise at something they realized through creating the plan, comfort of having a concrete plan, etc.) when asked what they remembered about the safety planning intervention. For example, one participant described feeling worried when her BHC first proposed creation of a crisis response plan, followed by relief that she was not being hospitalized:

> *"I remember filling out questionnaires and [BHC NAME] telling me it would be a good idea to do a crisis response intervention. I remember feeling worried when she said that, because I thought I was going to be hospitalized again. I was relieved when I realized that it was something I could just work on with [BHC NAME]."* (36-year-old White female, Community Clinic Rogers)

Another participant described creation of the crisis response plan as a "wake-up call":

> *"When [BHC NAME] suggested the suicide safety plan, it was shocking. I didn't realize my thoughts were to that point. It was a wake-up call when he suggested doing it, and I realized my thoughts were more dangerous than I initially thought."* (29-year-old White female, Pat Walker Health Center)

A third participant described finding comfort in creating the crisis response plan:

> *"I'm a person who really likes structure and order, so having a plan like that with 'what ifs' was very comforting…It was very comforting to have options for what to do. Like if my feelings were strong, there was an action I could take for each feeling. If I remember correctly, I think I put down a list of people I could talk to. It was a nice reminder, because during that time I felt like a bother to people and like I didn't want to burden them with what I was going through. It was a good reminder that they are there for me, and I should reach out when I feel that way."* (19-year-old Latina female, Pat Walker Health Center)

Characteristics about the behavioral health consultant. Three participants mentioned specific characteristics about the BHC (e.g., that the BHC was kind, calm, helpful, supportive, reasonable) when asked what they remembered about the intervention. For example, one participant explained:

> *"I remember [BHC NAME] was super calm; he didn't stress me out or anything. He did a really good job of not forcing answers out of me, but still getting me to give answers. I remember he was good at making me be realistic when we were making the plan. He helped me set reasonable, attainable goals for myself. He was also good at checking up on me – he messaged me a couple of times through Pat Walker Health Center's messaging center – it was nice to have somebody reminding me that somebody gave a shit. He didn't do it in a way that pressured me to say I was feeling better. It was more like, 'Hey! Just remember I'm here and I care about you!'"* (22-year-old White female, Pat Walker Health Center)

Most helpful part of the intervention. Participants' comments about what they found most helpful about the intervention fell into seven major themes: (1) characteristics about the behavioral health consultant, (2) safety plan components, (3) appreciating this intervention as an alternative to others, (4) feeling empowered, (5) increasing hope, (6) normalization of talking about suicide, and (7) getting connected with resources.

Characteristics about the behavioral health consultant. Many participants (n = 10) mentioned specific characteristics about the BHC as the most helpful component of the intervention. For example, one participant described how important it was to her that her provider was comforting and understanding:

> *"I found [BHC NAME] to be comforting, easy to talk to, and very understanding. I have had therapists in the past who were not understanding, who scolded me for not opening up. So I really appreciated that [BHC NAME] was not like that. I was scared to go in when Dr. [NAME] recommended I see a counselor, because of that previous experience. But [BHC NAME] was really accepting of me, even of things I judged myself for."* (29-year-old White female, Pat Walker Health Center)

Safety plan components. Half of the participants (*n* = 8) mentioned creation of the safety plan being helpful, or mentioned one or more of the specific components of the safety plan (e.g., coping strategies, people to talk to) as being the most helpful part of the intervention. For example, one participant described how identifying active coping strategies she could engage in to mitigate suicidal thoughts and feelings was helpful to her:

> *"Actually having something I could do physically and not just think about was the most helpful thing for me. It made me get out of bed when I wanted to just lay there and not talk to anyone. That was the biggest push in me getting better."* (19-year-old Latina female, Pat Walker Health Center)

Appreciating this intervention as an alternative to others. Some participants (*n* = 3) mentioned being grateful for this intervention as an alternative to long-term therapy, hospitalization, or medication. For example, one participant said:

> *"The whole crisis intervention. I'm relieved that there are other types of help besides going to a therapist or taking medication, or being put in the hospital. I was hospitalized in 2010 after I told my doctor I was thinking about slitting my wrists … I was in the hospital for three days and it was the worst time of my life. It made my personal life worse… I remember I didn't want to tell people the truth about what had happened because I was worried they would think I was crazy… It was just so embarrassing. I'm thankful that something like this exists as an option that can occur earlier, rather than forcing people into a hospital right away. I've always been afraid of telling people about my suicidal feelings because of what happened then, so it was nice to be able to talk to [BHC NAME] about it without that fear."* (36-year-old White female, Community Clinic Rogers)

Feeling empowered. Some participants (*n* = 3) mentioned feeling like they had greater control over their situation after creating the safety plan. For example, one participant said:

> *"It gave me more of a sense of responsibility. Having a concrete plan for changes I could make helped me go on the offense, take responsibility for helping myself."* (22-year-old White female, Pat Walker Health Center)

Increasing hope. Some participants (n = 3) mentioned that creating the safety plan helped them feel more hopeful about the future. For example, one participant said:

> *"Learning the specific things I could do to help myself helped me see that I had options… It was nice to know I have a place where I can go to get help, and it's not like the end of the world."* (19-year-old Latina female, Pat Walker Health Center)

Normalization of talking about suicide. Two participants mentioned feeling they could be more open and honest about their suicidal thoughts as a result of this intervention, which was the most helpful piece to them. For example, one participant said:

> *"It made me feel like suicide is okay to talk about. Normally, I'm pretty embarrassed about my depression and anxiety. It seems like people are not okay with talking about suicide and depression, or mental health in general. That visit made me feel more open to talking about feeling suicidal…I was glad to be able to speak openly and honestly with somebody about my suicidal thoughts."* (24-year-old White female, Community Clinic Rogers)

Another participant said this intervention helped him consider the possibility of talking about his suicidal thoughts with friends and loved ones:

> *"This helped me be more open to the idea of talking with people about my suicidal thoughts, particularly my loved ones. Before, that was a strange concept. It made me feel uncomfortable when I would think about having those conversations with loved ones."* (22-year-old White male, Pat Walker Health Center)

Getting connected with resources. One participant mentioned that the most helpful part of the intervention was when the provider helped connect her with needed resources (e.g., made a referral for long-term therapy):

> *"[BHC NAME] was able to refer me to [outpatient mental health clinic]. It was really helpful to start seeing… a regular therapist there."* (19-year-old Latina female, Pat Walker Health Center)

Least helpful part of the intervention. When asked about whether there was any piece of the intervention that they found unhelpful, most patients (n = 12) said there was nothing unhelpful about the intervention, or went on to continue describing positive aspects of the intervention. Two participants mentioned general barriers that were not specific to the safety planning intervention or the PCBH model (i.e., transportation and childcare difficulties). However, three participants did have comments about unhelpful aspects of this intervention. One participant mentioned disliking the brevity and limited frequency of visits within the PCBH model:

> *"This wasn't [BHC NAME]'s fault, but he was only allowed a certain number of visits with me. I didn't realize that when I first started seeing him, I thought it would be more of a regular thing. I remember feeling really resentful towards him when he told me it wasn't, because it was the first time I had opened up to a therapist, and I felt abandoned. I remember being really rude to him during one visit. It just wasn't enough time to work on what I needed."* (29-year-old White female, Pat Walker Health Center)

Another participant mentioned disliking the procedure of being referred to the suicide crisis team at the University's Counseling and Psychological Services Clinic (CAPS), because it felt redundant:

> *"[BHC NAME] had to refer me to CAPS after I met with him, which wasn't very helpful… I went up there the same day, and had to fill out the same exact emergency plan."* (21-year-old Latina female, Pat Walker Health Center)

Of note, the policy requiring BHCs to refer patients above a certain risk threshold to the CAPS crisis team has since been changed as a function of study participants' feedback, and because PCPs at Pat Walker have come to trust that the BHCs rotating in the primary care clinic have sufficient training to conduct high quality risk assessments and safety planning interventions in-house.

Finally, one participant mentioned disliking her BHC because she perceived her to be judgmental:

> *"I felt like I wasn't being heard, I felt more like I was being judged or looked at in a different way… I asked to see somebody else, because I didn't want to open up to her."* (31-year-old White female, Community Clinic Springdale)

Of note, this participant did mention that when she switched to a different BHC, she was able to make progress and learn valuable coping skills with her new provider.

Additional feedback. After participants were debriefed regarding the purpose of the study, they were given the opportunity to give additional feedback. Most of their responses continued to mirror themes from previous question prompts (i.e., commenting further on components of the safety plan that were helpful, praising the BHC, talking about the benefit of this intervention as an alternative to hospitalization), but two new themes emerged as well: (1) appreciation for the PCBH model, and (2) making suggestions for other helpful interventions. For example, one participant commented on how the process of receiving a warm handoff referral from her primary care provider helped ensure that she attend her behavioral health appointment:

> *"I had a medical appointment first, before I met with [BHC NAME]. Dr. [NAME] is the one who recommended I meet with him. I know that if Dr. [NAME] hadn't been so assertive I would have written it off. Having him assertively tell me, 'not only does this person exist, but I highly recommend you go see him, and I've already set up an appointment' was really helpful. I needed the extra push. I could easily envision my social anxiety getting in the way otherwise – I would never have asked for an appointment like this myself, but I'm glad it happened. The appointment was so soon after my medical appointment that I felt really bad canceling, I felt like I had to go. It ended up being a huge help for me mentally. I love this idea!"* (22-year-old White female, Pat Walker Health Center)

One participant also mentioned the potential utility of having a support group for people experiencing suicidal ideation:

> *"It would be helpful to have a group, where people with suicide risk could talk about things they have tried or things that have helped them cope with suicide risk in the past. Sometimes I feel like I'm the only that feels this way. I feel annoying that I'm always feeling bad, and sad. I feel like my family is getting tired of me. So knowing that there's*

> *more people like me and that we could help each other out would help me a lot."* (22-year-old Latina female, Community Clinic Springdale)

Dichotomous questions about effects of intervention. After responding to the open-ended interview questions, participants were also asked to reflect on the initial study visit and indicate whether they agreed with the following statements: "I learned how to identify the onset of a suicidal crisis," "I learned better coping strategies for how to deal with a suicidal crisis," "I felt more hopeful about the future," "I felt more confident that I could handle suicidal crises" and, "I appreciated the opportunity to talk to somebody about my problems." Frequencies of endorsement of these dichotomous items are presented in Table 8. Although all of these statements were endorsed by a majority of participants, the most commonly endorsed response was that participants appreciated the opportunity to talk to someone about their problems.

BHC Perceptions of the Intervention. In addition to exploring patient perceptions of the intervention, I was also interested in gathering information on the BHCs' experiences of delivering this intervention in primary care. I interviewed three out of the five BHCs who delivered this intervention with study participants most frequently. Table 9 presents all thematic categories I identified from interviews with the BHCs, with their relative frequencies of endorsement. Below is a more detailed description of the thematic categories that emerged, along with exemplar responses. Themes are presented in order of relative frequency of endorsement, from most to least commonly endorsed.

Intervention components patients responded well to. BHCs' comments about intervention components patients responded well to fell into four themes: (1) the therapeutic relationship, (2) creation of the safety plan, (3) having an open conversation about suicide risk, and (4) general comments about patient engagement.

Therapeutic relationship. All of the BHCs interviewed (*n* = 3) mentioned the therapeutic relationship as a component of the intervention their patients responded well to. More specifically, the BHCs mentioned the impact of their patients feeling understood, supported, and heard. For example, one BHC explained:

> *"It seemed like [the in-depth risk assessment] made them feel understood. In our culture most people don't want to talk about [suicide risk] at all, much less in detail, so people responded well to just being heard and listened to."*

Creation of the safety plan. Two of the BHCs mentioned creation of the safety plan as something their patients responded well to. They explained that the collaborative nature of the safety planning intervention, the availability of this intervention as an option, and having discussions with their patients about warning signs for suicidal crises were all things their patients seemed to appreciate. For example, one BHC explained:

> *"I think even hearing that [the safety planning intervention] is an option seemed to take a lot of patients by surprise. When I would talk to them about my concerns and mention this tool, even that seemed to be beneficial to the patients. Hearing that we could work together to create a plan to help keep them safe [was helpful]."*

Open conversation about suicide risk. Two of the BHCs mentioned asking about suicide risk directly and talking about it openly and in detail was something their patients responded well to. For example, one BHC explained:

> *"The best part is that you're even asking in the first place… Just talking about [their suicide risk] and acknowledging it often seems to help. Just them knowing that they can put that out there and let me know has made a huge difference."*

Another BHC said:

> *"My sense is that people really appreciated going through step by step what had preceded them having those thoughts, what the thoughts looked like, etc. They appreciated the depth of the conversation. ... I was a little surprised by the degree to which people were willing to talk to great depth about it."*

General comments about patient engagement. In addition to describing specific intervention components patients had responded well to, two of the BHCs also made general positive comments about patient engagement. For example, one BHC said:

> *"Initially I was wondering if patients would be scared about doing this intervention, but they were all pretty open to it."*

***Intervention components patients did not respond well to*.** BHCs' comments about intervention components patients did not respond well to fell into two themes: (1) specific safety plan components, and (2) repetitive nature of the risk assessment.

Specific safety plan components. Two of the BHCs mentioned specific safety plan components (i.e., identifying crisis line numbers, means restriction) that their patients did not respond well to. For example, one BHC explained:

> *"The place on the safety plan where you have them list emergency numbers…it was hard to fill in some of the emergency clinical contact spots at times, because people would say things like, 'I wouldn't go to urgent care' or 'I wouldn't go to the ER.' So that part seemed not as effective. People didn't seem confident that they would reach out to those numbers. People were responsive to hearing about the crisis text line though, probably because it's the most convenient option. But people were less responsive to hotlines that they actually had to call."*

Another described how the means restriction portion of the safety plan did not always feel relevant for patients demonstrating lower levels of risk:

> *"I didn't have a lot of people with really high levels of intent, so I think talking about means restriction and coming up with ways to make the environment safe was a struggle for some people. I didn't have a ton of people who could readily identify methods they would use or things they needed to do to make their environment safer."*

Repetitive nature of risk assessment. One BHC said the in-depth risk assessment felt repetitive at times:

> *"Some of the risk assessment questions can feel repetitive. For example, it may come up naturally that they've had a previous suicide attempt, but then that question does not appear until three or four pages later in the risk assessment. It can be repetitive in that way."*

Another BHC stated there were no intervention components he felt patients disliked.

Most useful parts of the safety plan. BHCs' comments about the most useful or important parts of the safety plan fell into five themes: (1) warning signs, (2) social supports, (3) reasons for living, (4) coping skills, and (5) useful distractions.

Warning signs. Two BHCs mentioned it was helpful to discuss warning signs and triggers for suicidal thoughts with their patients. For example, one BHC stated:

> *"I do recall that with the warning signs and triggers piece, it seemed like most people hadn't necessarily thought through those things consciously before. It was helpful to sit down and have them think through, 'okay what are the things that signal this is coming?'"*

Social supports. Two BHCs mentioned identifying and activating social supports was a meaningful part of the safety plan. For example, one BHC said:

> *"For folks who had friends and family to put on there, that seemed to resonate a lot. It was a useful reminder for them that they have those resources."*

Reasons for living. Two BHCs said the discussion of reasons for living was particularly impactful for their patients. For example, one BHC explained:

> *"The patients would often mention reasons for living throughout the course of the risk assessment and creation of other parts of the safety plan. Having them actually articulate and write down reasons for living felt like the right place for the intervention to end – I liked that it was the last thing on the safety plan. Having it there definitely played a huge role in getting them to reflect on what is keeping them here. I didn't feel like people struggled with that piece. That always made me feel more relieved, when people could articulate their reasons for living."*

Another BHC said:

> *"I think the last question about reasons for living was important to patients. I'm glad it's at the end. We're talking about really difficult things, so it's good for them to articulate some reasons to be hopeful, reasons they wouldn't hurt themselves. They get a little brighter, and you can see them feel a bit better."*

In addition, one BHC said identifying personal coping strategies and useful distractions stood out to her as parts of the safety plan that were useful to almost all of her patients.

Role of the therapeutic relationship. BHCs' comments about how the therapeutic relationship contributed during this intervention fell into two major themes: (1) positive rapport is essential when discussing suicide, and (2) BHC actions and qualities that facilitate rapport.

Positive rapport is essential when discussing suicide. All three BHCs commented on the fact that positive rapport is essential when discussing suicide. For example, one BHC explained:

> *"Within 20 minutes of meeting me the patients had to feel comfortable enough to open up and share these intimate details about themselves, so I think [the therapeutic relationship] actually plays a pretty big role. Especially given how nervous people are to open up and share suicidal thoughts. I had a lot of patients who were afraid they were going to immediately be hospitalized and were nervous to open up because of that."*

Another BHC said:

> *"You're asking people about pretty personal things. Not only deeply personal things, but also things that are kind of taboo, so I think at least a basic level of rapport is necessary to do it well... If you just had just put somebody in front of a computer to answer those questions I don't think it would have the same effect."*

BHC actions and qualities that facilitate rapport. In addition to commenting on the importance of the therapeutic relationship when discussing suicide risk, one BHC explained things she did in sessions to try to facilitate positive rapport:

> *"One thing I think is important as the clinician is having confidence and being nonjudgmental. I think a lot of times patients haven't really talked about this before. Just having the confidence to say the words 'kill yourself' helps normalize it a little bit. I think that helped…I really tried to listen, reflect, and tie in what they were saying throughout the assessment. I was always really validating them like, 'I know this is a lot of questions, hang in there… I just really want to keep you safe.'"*

How the intervention fits within the flow of primary care. BHCs' comments about how the safety planning intervention fits within the flow of primary care fell into five major themes: (1) took longer than typical behavioral health visits, (2) felt feasible, (3) BHC flexibility and problem-solving to improve patient care, (4) utility of the intervention superseded scheduling concerns, and (5) difficulties.

Took longer than typical behavioral health visits. All three BHCs acknowledged that completing the risk assessment and safety planning intervention took longer than a typical 30-minute behavioral health visit. Two out of the three BHCs clarified that this intervention typically took them about an hour to complete.

Felt feasible. Two of the BHCs said that despite taking longer than a typical behavioral health visit, it felt feasible to offer this intervention in the PCBH setting and it was easily implemented.

BHC flexibility and problem-solving to improve patient care. Two of the BHCs described adaptations they made to improve patient care, such as working with clinic staff to reschedule patients whose appointments had to be canceled or delayed in order to accommodate the longer meetings with patients completing this intervention. For example, one BHC explained:

> *"If there were patients scheduled right after the person and I knew I would need about an hour to finish the safety planning intervention, I would only cancel the one person directly after them. I would budget myself the extra 30 minutes, and then just make up the time elsewhere – either during my admin time or lunch. I never felt like it threw my whole day off. What I would usually do was be in close communication with the front desk staff. I would either run out there while I was having the patient read consent or fill out the first measures, or I would call the front desk and see if the next patient could come back during my admin time…I would try to problem-solve based on severity of the patients I was re-scheduling. I would sometimes tell the front desk staff to offer them an appointment as soon as a cancellation occurred on my schedule. I also used the messaging system a lot, and would communicate directly with patients on there. My back-up plan was to be a little behind or double book myself and just make it work. It never really felt burdensome."*

Another BHC described a similar approach:

> "*The way I made it work was largely thanks to the nursing staff. Usually what I came to do when I realized it would be necessary to go through it was ask the nurses to call the next few patients and ask them if they would mind rescheduling."*

Utility of intervention superseded scheduling concerns. Two of the BHCs explicitly stated that even though the safety planning intervention took extra time, the utility of the

intervention superseded any scheduling concerns they might have. For instance, one BHC described:

> *"I think it was worthwhile, I never really minded [asking other patients to reschedule] because…I think these visits were higher priority and more time sensitive than just a routine check-in."*

Difficulties. Two BHCs did mention specific difficulties of offering this intervention in the PCBH setting. For example, one BHC said it was difficult being the only behavioral health provider in her clinic:

> *"Since I'm the only behavioral health provider, if there's three things going on at once that require my attention it can be difficult. Because this intervention is pretty in-depth and I don't want to just not finish it."*

Another BHC said she occasionally felt guilty about having to reschedule other patients to accommodate the safety planning intervention:

> *"I would say the most pressure I felt was not for my own day or schedule, but for my patients, because my schedule was so full all the time that rescheduling would push people out awhile."*

How PCPs responded to this intervention. BHCs' comments about how the PCPs in their clinics responded to their management of suicidal patients with this intervention fell into four themes: (1) positive reaction, (2) benefits to PCP, (3) collaborative process, and (4) PCPs were often surprised to learn about patients' suicide risk.

Positive reaction. All three BHCs reported the PCPs in their clinics had a positive reaction to their management of suicidal patients with this intervention.

Benefits to PCP. Two BHCs mentioned specific ways this intervention has benefitted PCPs in their clinics. For example, one BHC explained how this has lifted the burden of risk detection and management from the PCPs:

> *"As was the case with most things there, I think they were glad I was there to do all the stuff they don't have time to do or necessarily want to do."*

Another BHC explained that the PCPs in her clinic now rely on her for risk assessment, and feel more comfortable knowing she is there to consult with on risk assessment questions:

> *"Last week a provider tracked me down and called me back to the clinic because somebody had endorsed suicidal thoughts and she wanted me to do further risk assessment with him. I think it has made providers more comfortable knowing they have somebody in the office that knows how to properly assess for risk, and who they can consult with… They also know I consult with [SUPERVISOR NAME], so it's taken off their plate a bit."*

Collaborative process. Two BHCs mentioned something about the collaborative process between BHCs and PCPs that has emerged as a result of this intervention. More specifically, these two BHCs said they always kept PCPs informed of their findings, and mentioned that the PCPs usually offered to help with management of risk either via medication management or more frequent follow-up appointments with the patient. As one BHC explained:

> *"Whenever I did the safety planning intervention I would follow-up with the person's PCP if they were there, and fill them in. I never had a provider question any clinical decisions I made…They would usually offer to reach out, do something with med management, or tell me to let the patient know they could come see the PCP as well."*

PCPs were often surprised to learn about patients' suicide risk. Two BHCs mentioned PCPs were often surprised to learn about the suicide risk BHCs had discovered through doing the risk assessment with their patients. For example, one BHC said:

> *"They were always very gracious, and they were often surprised that it happened. There were one or two patients that they weren't surprised about, but a lot of the times they were taken aback like 'oh, I had no idea.'"*

How providing safety planning in PCBH impacted clinical training. BHCs' comments about how providing safety planning in PCBH impacted their clinical training fell into three themes: (1) benefitted training, (2) first experience managing suicide risk, and (3) recommended risk assessment tool to others.

Benefitted training. All three BHCs said providing safety planning in PCBH benefitted their clinical training, in that it improved their comfort and skill assessing suicide risk. As one BHC explained:

> *"I feel very, very comfortable assessing suicide risk now… I think being able to gain experience with it has made me feel more comfortable. I can now assess risk quickly, effectively, and comprehensively."*

Another BHC described a similar impact:

> *"I think it added to my training a lot. Because it gave me the opportunity to build confidence in the area of risk assessment, and really have a strong sense of what things I need to assess. I would say I kind of knew those things before but they weren't articulated in a super clear way to me. The way this intervention is set up makes a lot of linear sense…It has been very important to my training. It's much better than just being told, 'well you need to assess for risk.' I feel much more prepared to do this in the future, because I have an idea of all the things that go into assessing risk now."*

First experience managing suicide risk. Two of the BHCs explained that having access to a clearly outlined risk assessment tool was especially helpful to them because this was their first experience managing suicide risk. For example, one BHC said:

> *"I think it helped me immensely, because it was kind of my first experience in the clinical program navigating suicidal ideation with real patients. It really impacted me, because I feel like now I can use the information I've learned and the algorithm the intervention includes."*

Recommended risk assessment tool to others. One BHC said the risk assessment tool was so helpful to his training that he has recommended it to several other graduate student clinicians:

> *"I don't know if any of them followed up with you, but I actually recommended your tool to a lot of the other graduate clinicians in our department. It was a good training experience."*

Impressions of the risk assessment tool. BHCs' comments about their impressions of the Qualtrics risk assessment tool fell into three themes: (1) positive comments, (2) negative comments, and (3) recommendations.

Positive comments. All three BHCs had positive comments about the Qualtrics risk assessment tool. They mentioned the tool was straightforward, easy to use, functional, helpful, and intuitive. For example, one BHC said:

"I found it straightforward and easy to use. I liked having it online."

Negative comments. All three BHCs also had negative comments about the Qualtrics risk assessment. More specifically, they all mentioned that the order of questions in the tool did not always match the natural flow of conversation, and that it was inconvenient to have to jump around to fill in participant responses. For example, one BHC explained:

> *"Sometimes when I was trying to talk to the patient during the risk assessment and the conversation was unfolding, they would mention pieces that would come at later points in the survey. I tried my best to recall what they had said or check back in when I arrived at those points, rather than just re-asking the question about something they had already mentioned."*

Recommendations. In addition to commenting on the existing tool, two BHCs made recommendations for how the tool could be improved. For example, one BHC said in a purely clinical context it would be helpful to be able to skip questions ideographically:

> *"I think if I were to do it purely as part of a risk assessment totally disconnected from data collection, I would probably skip some questions ideographically based on the person and time. But as something that was meant to be widely applicable and generalizable I didn't have any issues with it."*

Two BHCs also mentioned it may have been more helpful if the risk assessment tool was all on one page, rather than split up into different sections that they had to click through.

Discussion

This study aimed to examine the preliminary evidence of effectiveness, acceptability, and feasibility of a single-session crisis response planning intervention for use with primary care behavioral health patients at a moderate risk for suicide. Although previous work suggests single-session crisis response planning can be effective at reducing suicidal ideation and

preventing suicide attempts among high-risk active duty military personnel presenting for emergency behavioral health appointments (Bryan et al., 2017), no study to date has examined the effectiveness of this intervention in a primary care clinic serving civilian patients. Indeed, empirical investigations of patient level interventions with a direct focus on management of suicide risk in primary care are quite limited (Dueweke & Bridges, 2018). A better understanding of whether and how suicide risk can be managed in primary care is a critical step in efforts to improve current clinical prevention and intervention efforts regarding suicidal thoughts and behaviors. Using a mixed-methods approach, data from the present study provide preliminary evidence that moderate suicide risk can be managed in primary care through integration of behavioral health consultants into the primary care team.

Preliminary Evidence of Effectiveness

Importantly, none of the participants in the present study attempted or died by suicide in the period of time between the crisis response planning intervention and the 4-month follow-up interview. This is not insignificant, given half of the study sample had a history of at least one suicide attempt, with some participants reporting a recent attempt (i.e., within a month prior to the current episode of care), a highly lethal attempt (e.g., holding a loaded shotgun to their head and pulling the trigger, patient did not die because the gun failed to fire), or multiple past attempts (up to five).

However, my hypothesis that the single-session safety planning intervention would lead to within-session reductions in suicide risk and increases in hope and coping efficacy was only partially supported. Counter to what I initially hypothesized, participants did not report any change in suicidal cognitions within the brief crisis response planning intervention. Upon further reflection, it is understandable that the safety planning intervention was insufficient to modify

suicidal cognitions, because the intervention places a much greater emphasis on problem-solving and identification of behavioral coping strategies the patient can enact during suicidal crises than on challenging cognitive distortions. Indeed, when asked what they remembered about the intervention during the follow-up interview, all 16 participants said they remembered something about a behavioral coping strategy. In contrast, only three mentioned something related to a focus on thoughts (e.g., reflecting on why they would want to live). Similarly, most participants discussed behavior change when asked what was most helpful about the intervention. One participant even said explicitly that she preferred the behavior-focused approach of this intervention to more cognitive-focused interventions, explaining, "*Actually having something I could do physically, instead of just trying to think positively, was the most helpful thing for me."* As such, the null finding with regard to change in suicidal cognitions may speak to the specificity of this intervention. Additionally, the items included in the SCS-S assess global negative beliefs about the self and the intractability of one's problems, rather than present-focused suicidal ideation. It is possible the SCS-S was not an appropriate measure to capture within-session change in suicidal ideation.

Participants did not demonstrate within-session changes in hope or coping efficacy following receipt of the safety planning intervention either. This could be because they had not yet had the opportunity to put their identified coping strategies into practice by the time of the post-intervention assessment, even though they had discussed and thought about possible coping strategies. It could also be that a single-session behavioral intervention delivered in primary care was insufficient to modify hope or coping efficacy in such a short time period, or that the single-item measures of hope and coping efficacy were unable to capture changes within this timescale.

Nevertheless, I was interested in examining the degree to which changes in patients' ratings of coping efficacy and hope within session might be attributable to the strength of their crisis response plans. When I explored these relationships, I found pre-post change in coping efficacy was strongly correlated with the overall strength of patients' crisis response plans (r = .62), and was consistently positively correlated with every individual section of the crisis response plan as well (correlations ranging from .26 to .56). The individual sections of the safety plan that were most strongly correlated with pre-post change in coping efficacy were those related to internal coping skills (r = .56) and activating social supports (r = .56). Pre-post change in hope was also positively correlated with the overall strength of patients' crisis response plans (r = .23), but to a weaker degree. The individual section of the safety plan that was most strongly correlated with pre-post change in hope was the section related to social supports (r = .49), suggesting the process of identifying supportive individuals patients could rely on during future suicidal crises may have had the strongest influence on patients' hope within session.

Notably, although I did not observe a change in hope or coping efficacy within session as measured by single self-report items administered pre- and post-intervention, qualitative data from participant interviews suggest the crisis response planning intervention did increase hope and coping efficacy in that time frame, at least for some participants. In response to the open-ended question about what participants found to be the most helpful part of the intervention, three participants explicitly mentioned feeling more hopeful after creating the crisis response plan with their BHC, while three others said the intervention gave them a sense of empowerment and efficacy to cope with future suicidal crises. Additionally, in response to the dichotomous questions about perceptions of the intervention administered during the follow-up interview, 14 out of 16 (87.5%) participants agreed that they felt more hopeful immediately after the crisis

response planning intervention, and 13 out of 16 (81.3%) agreed that they felt more confident in their ability to cope with future suicidal crises. It is possible participants' more positive ratings of the intervention effects at the 4-month follow-up time point are due to hindsight bias. However, these questions specifically asked participants to reflect on the effects of the intervention after it was delivered, as opposed to asking about current functioning. Thus, it is likely participants' responses to these questions were at least somewhat reflective of their feelings about the intervention's impact directly after it was delivered.

Although the single-session safety planning intervention did not appear to have an immediate impact on suicidal cognitions, hope, or coping efficacy, the intervention was effective at reducing participants' self-reported suicidal intent within session. This reduction is understandable, because the primary focus of the crisis response planning intervention is on reducing patients' likelihood of attempting suicide by providing them with options for alternative behaviors they can engage in during emotional crises. Although most aspects of the safety plan are focused on planning ahead for ways patients can manage future suicidal crises, discussing reasons for living is one component of the safety planning intervention that could begin to reduce suicidal intent immediately within session. Identifying reasons for living is thought to reduce suicidal intent by strengthening the patient's desire to live and combatting suicidal ambivalence (i.e., the balance between wish to live and wish to die; Bryan, Rudd, Peterson, Young-McCaughan, & Wertenberger, 2016). Several patients mentioned reasons for living that deterred them from attempting suicide – for many, these reasons included children, pets, family members, and goals for the future. As one patient explained, *"I have two kids - life isn't just about me anymore. I would never leave them alone."* Indeed, there was a strong positive association (r =.66) between the strength of patients' reasons for living sections of their safety plans and their

pre-post change in intent; this was the strongest association between any of the individual crisis response plan sections and within-session change in intent. As one participant described: *"I actually left feeling good. [BHC NAME] helped me feel that life is worth living. She actually did take my sadness away."* BHCs also noted the importance of discussing reasons for living, saying it seemed to be a particularly impactful component of the intervention and that they noticed patients become visibly lighter after discussing the things motivating them to stay alive. Moreover, BHCs suggested it was especially helpful to end the safety planning intervention by talking about reasons for living. Because discussing suicide risk is such a heavy topic, building in a lighter and more hopeful ending to the visit seemed to be important.

It is possible the therapeutic relationship also contributed to declines in suicidal intent within session. Although I lack quantitative data to speak to the impact of the therapeutic relationship on suicidal intent, a majority of patients said the therapeutic relationship was the most helpful piece of the intervention for them. As one patient explained, "*Honestly I think [the most helpful thing] was just being able to go and talk about it to someone. I felt a lot of relief after that. It was like a weight lifted off. It was nice to have somebody know. [BHC NAME] was the first person who didn't invalidate my feelings.*" Another participant said, *"It seemed like [BHC NAME] was actually concerned. It was nice to know I have a place where I can go to get help, and it's not like the end of the world. She cared enough to get me that help."* The BHCs providing the crisis response planning intervention also commented on the beneficial impact of having a positive therapeutic relationship on their patients' treatment gains.

Joiner's (2005) IPTS provides a helpful framework to guide hypotheses about why so many patients mentioned the therapeutic relationship as being helpful in reducing their suicide risk. First, the presence of a positive therapeutic relationship likely reduced patients' feelings of

social isolation and increased feelings of belongingness and social connection. During this intervention, patients had the opportunity to speak openly with another person about their suicidal thoughts and to be met with validation rather than judgment, and support rather than distancing. The BHCs' comfort with being direct and open when discussing suicidal thoughts may have also served to normalize patients' experiences, which could have led to them feeling less alone. The presence of a positive therapeutic relationship also may have modified patients' perceived burdensomeness, which is another important risk factor for suicidal desire described by the IPTS (Joiner, 2005). Throughout the intervention BHCs were understanding, emotionally supportive, and validated patients' feelings. It is likely these "common factors" of therapy helped convey the message that patients' feelings were real and important, and that, contrary to seeing their patients as a burden, the BHCs were strongly invested in their patients' well-being. It also may have been helpful that the therapeutic relationship provided patients with a supportive individual to talk to who was outside of their personal social support circles. As one patient explained: *"It's hard - when I talk to my boyfriend about this he worries about me, and I don't like to make him worry, so it's not a good feeling to me. It was nice to talk to somebody who was confident in handling the situation instead of entering panic mode with me, who didn't see me as a fragile individual."* Thus, it seemed patients did not see themselves as burdensome in the therapeutic context, given the BHCs' professional responsibility to listen and be emotionally supportive.

Consistent with my second hypothesis, participants reported noticeably reduced suicidal intent and increased hope and coping efficacy during the 4-month follow-up interview. Although the observed gains at follow-up are encouraging, it is difficult to conclude participants' lower suicidal intent and higher ratings of hope and coping efficacy at this later time point were due

solely to lasting effects from the crisis response planning intervention. Indeed, most patients likely sought behavioral health services and completed the crisis response planning intervention in the midst of a highly stressful "crisis period." Studies have shown that the acute period of heightened risk for suicide tends to be relatively short in duration, sometimes lasting as little as minutes or hours (Hawton, 2007, Simon et al., 2001). In one study, Deisenhammer and colleagues (2009) found that roughly 90% of suicide attempters reported thinking about suicide for less than a month before attempting suicide, whereas only 10% had been having suicidal thoughts for longer than a month. Thus, it is likely that by the time of the 4-month follow-up interview, the suicidal crisis that prompted entry into behavioral health treatment would have resolved for most study participants. Additionally, there are myriad reasons participants' general feelings of hopefulness and perceived efficacy to cope with stressful situations may have improved over time that could have had little to do with the active ingredients of the crisis response planning intervention (e.g., emotional crisis has passed, environmental stressors have been resolved). It is also possible these gains are reflective of a regression to the mean effect, wherein participants who initially gave extremely high ratings of intent and low ratings of hope and coping efficacy at pre-test were likely to give more average ratings when re-assessed at follow-up.

However, it could be that participants' reduced suicidal intent and more positive reports of hope and coping efficacy at the 4-month follow-up time point were due at least in part to contributions from the crisis response planning intervention. Bandura's theory of self-efficacy (1994) describes four main ways of building self-efficacy: mastery experiences, vicarious experiences provided by social models, verbal persuasion, and emotional state. Of these four sources of influence, verbal persuasion and emotional state are both likely at play during the

creation of the crisis response plan, but may be working against one another. That is, most patients probably enter their behavioral health visit in the midst of high stress or a negative emotional state, which contributes to lower feelings of self-efficacy. Although one of the BHC's goals throughout the intervention is to encourage the patient that they have what it takes to engage in adaptive coping and manage their suicidal thoughts, it is difficult to instill high beliefs of self-efficacy by verbal persuasion alone (Bandura, 1994). Indeed, Bandura posits the most effective way of building a sense of self-efficacy is through mastery experiences (Bandura, 1994). Immediately after creating the crisis response plan, the patient has thought about possible coping strategies, but has not yet had the chance to put these strategies into practice. This could explain the lack of within-session improvements in hope and coping efficacy. In contrast, by the time of the follow-up interview, patients have had opportunities to utilize their identified coping skills and solutions. Consistent with this interpretation, qualitative data from patients' follow-up interviews suggest they did enact the coping skills and solutions identified during the initial crisis response planning intervention over time. Most frequently, participants described applying new coping skills in the wake of the crisis response planning intervention. For instance, one participant explained: *"[BHC NAME] gave me a ton of great behavioral recommendations - things that seem small, but have really helped me. Things like trying to get up at the same time every day and get myself a cup of coffee – I've realized even that is an accomplishment…"* Another participant said she started working out, and was trying to surround herself with positive people. Several participants also described instances of reaching out to social supports to help them manage suicidal crises. For instance, one participant said she called her best friend and asked her for help in researching suicide crisis hotlines after the crisis response planning intervention. Another said: *"Before when I felt suicidal I would isolate myself even more – I*

would spend a lot of time in my room and sleep more than normal. Now I tell my roommates how I feel, and they help force me out of my room." Bandura's suggestion that self-efficacy is largely built on implementation and mastery experiences could explain the more positive reports of hope and coping efficacy and lower ratings of suicidal intent seen at the follow-up time point.

When I explored the degree to which improvements in patients' coping efficacy and hope ratings across time might be attributable to the strength of their crisis response plans, I found pre-follow-up change in coping efficacy was positively correlated with the overall strength of patients' crisis response plans (r = .17). In looking at the correlations between individual sections of the crisis response plans and pre-follow-up change in coping efficacy, the strongest correlations were found for the useful distractions (r = .18) and activating social supports (r = .19) sections, suggesting these may have been the strategies people relied on and practiced the most over time. In contrast, there was not a consistently positive relationship between the strength of patients' crisis response plans and their changes in hope across time. In fact, there was actually a medium negative correlation (r = -.37) between the overall strength of patients' crisis response plans and pre-follow-up change in hope.

The consistently positive correlations between strength of the crisis response plans and changes in coping efficacy across time make sense, given the main focus of the crisis response planning intervention is on reducing likelihood of suicide by brainstorming active coping strategies patients can utilize. In contrast, it is possible changes in hope are driven by other aspects of the behavioral health intervention not measured in the quantitative piece of this study, such as the positive therapeutic relationship. It is also possible the counterintuitive findings regarding the relationship between strength of patients' safety plans and their changes in hope at follow-up are reflective of the way hope was measured in the present study. The single-item

measure of hope was a future-oriented question that asked participants, "How much hope do you have that things will get better?" Perhaps patients whose circumstances had improved substantially by follow-up did not endorse this item highly because things already had gotten better, and they were not expecting or hoping for their circumstances to continue to improve beyond what they already perceived to be a satisfactory level of well-being. Taken together, the positive associations between the strength of patients' crisis response plans and their changes in coping efficacy seem to speak to the specificity of the active ingredients of this intervention. Further research is needed to better understand if and how the creation of a crisis response plan relates to changes in patients' hope.

Consistent with Bandura's theory of self-efficacy, it stands to reason that various components of the safety planning intervention likely contributed to patients' continued reductions in suicidal intent across time. First, working collaboratively with a BHC to identify behavioral coping strategies and distraction techniques may have bolstered and diversified the patient's "toolbox" of approaches they could take to alleviate negative feelings, rather than turning to suicidal thoughts or behaviors in response to distress. Indeed, one participant described how spending time with a friend to take her mind off of things reduced her suicidal intent during a crisis that occurred after the safety planning intervention: *"I shared my suicidal thoughts with a friend and she managed to get me out of the house. We went out to eat and that helped get my mind off things. I still felt a little suicidal, but felt less inclined to act on my feelings than before."* Second, activating existing social supports may have increased the patient's social connectedness, thereby reducing feelings of social isolation that can contribute to suicidal thoughts and behavior (Joiner, 2005; Whitlock, Wyman, & Moore, 2014). As one patient explained: *"When I was with [BHC NAME], we filled out a list of everybody I could talk to if this*

became more serious. Afterward I thought about the people on that list, and decided to reach out to all of them and explain how I felt, to make them more aware of my situation. I got a lot of extra support. Telling people in my life [about suicidal thoughts] and having them take me seriously helped so much." Third, means restriction is thought to reduce the likelihood of fatal suicide attempts by delaying one's ability to make a suicide attempt until the period of highest risk passes, given suicidal crises are typically extremely acute (Sarchiapone, Mandelli, Iosue, Andrisano, & Roy, 2011). In fact, researchers who have interviewed survivors of nearly-lethal suicide attempts have found the time between thinking about attempting and actually attempting suicide is less than 10 minutes for roughly half of attempters (Deisenhammer et al., 2009), and less than five minutes for nearly a quarter of attempters (Simon et al., 2001). Research also suggests that if a favored means becomes unavailable people do not generally seek out a substitute method (Chen, Wu, Yousuf, & Yip, 2012; Daigle, 2005). As such, there is strong reason to believe restriction of patients' access to dangerous methods for suicidal behavior reduces the occurrence of suicidal acts, especially those that are driven largely by impulsivity and low distress tolerance (Hawton, 2007). Qualitative data suggest some participants did limit their access to methods for attempting suicide after participating in the crisis response planning intervention. For instance, one participant described how she worked with her doctor to remove access to sleeping pills she had thought about using to overdose: *"I was taking some sleep medication for a while, and thought that would be one way to do it, to just take more of my medication than I should have. But I've talked to my doctor about it since and I'm no longer on that medication."* However, BHCs noted means restriction did not feel relevant for many of their patients, especially those who did not endorse a specific plan or access to any lethal means.

When I explored the degree to which improvements in patients' suicidal intent across time might be attributable to individual sections of their crisis response plans, I found that the strength of the coping skills (r = .23) and social supports (r = .40) sections were most strongly related to reductions in suicidal intent at follow-up. In contrast, the strength of the means restriction section was not positively related to reductions in intent at follow-up, perhaps because it was not relevant to many of the patients in the present study (i.e., those who did not identify access to lethal methods to begin with). Taken together, these results suggest patients continued to apply the coping strategies learned during the single-session crisis response planning intervention across time, and their use of internal coping skills and reliance on social supports may have had the greatest impact on reductions in suicidal intent during this time period. These findings are consistent with the IPTS (Joiner, 2005), which posits that increasing a person's feelings of social belongingness will reduce suicidal desire, and the fluid vulnerability theory of suicide (Rudd, 2006), which posits that teaching patients more adaptive coping strategies can help break their learned response of entering the "suicide mode" during periods of acute stress. It is also possible the crisis response planning worksheet helped patients find alternative behaviors they could engage in to stop bad feelings, add desirable internal states, and obtain desirable social outcomes, consistent with the functional model of suicide (Nock & Prinstein, 2004).

Patients' responses regarding what was most helpful about the intervention seemed to center on three aspects: (1) the active ingredients of the intervention (i.e., psychoeducation, enhancement of coping skills, activation of social supports); (2) the therapeutic relationship; and (3) the outcomes associated with the intervention (i.e., instillation of hope and coping efficacy). Of note, the safety planning intervention contains several of the common elements of effective treatments for suicide that Rudd and colleagues (2009) have outlined. The fact that this

intervention integrates information from well-established theories of suicide, places a strong emphasis on self-management, takes a skills-based approach, and maintains suicide risk as the central focus likely contributes to its effectiveness. Although the active ingredients of the intervention certainly seemed to be helpful and were memorable to the participants, more than half of participants indicated the most helpful part of the intervention was simply having somebody to talk to who was empathetic, nonjudgmental, calm, and kind. Similarly, for one participant who perceived her BHC to be judgmental and abrasive, the effectiveness of the crisis response planning intervention was reduced. It seems that in addition to building a repertoire of behavioral coping skills, activating existing social supports, limiting access to lethal means, and reducing suicidal ambivalence through a conversation about reasons for living, this intervention was also helpful to patients because of the positive therapeutic relationship established with the BHC. These findings add to a growing body of work suggesting that therapeutic alliance can be easily formed in PCBH, despite the rapid pace of treatment (Corso et al., 2012). Perhaps common factors are especially important for patients experiencing suicidal crises, because a positive therapeutic alliance allows patients to feel validated, cared for, de-stigmatized, socially connected, and comforted. Findings from the present study support the need to consider the roles of both active ingredients and common factors of therapy when considering treatment effectiveness (Hofmann & Barlow, 2014; Laska, Gurman, & Wampold, 2014).

Acceptability

As hypothesized, this intervention was found to be acceptable by PCPs, BHCs, and patients alike. All of the BHCs reported that PCPs in their clinics had a positive reaction to their management of suicidal patients using this intervention. More specifically, they said their ability to offer this intervention lifted the burden of risk detection and management from the PCPs, and

the PCPs in their clinics felt more comfortable knowing the BHCs were available to consult with on any risk assessment questions. BHCs also reported that PCPs came to be very reliant on them for suicide risk assessments, and did not ever question their judgment regarding patients' suicide risk. Perhaps as further evidence of the PCPs' positive reaction to this intervention, BHCs also noted PCPs were keenly interested in their risk assessment findings and usually offered to help with management of risk either via medication management or more frequent follow-up appointments with the patient in question.

BHCs also seemed to have a positive reaction to this intervention. They did not have many concerns about offering crisis response planning in a PCBH setting, and were happy to make adjustments to their schedules to accommodate the needs of suicidal patients. Furthermore, all of the BHCs indicated offering this intervention in PCBH benefitted their clinical training, in that it made them more confident and competent to assess and manage suicide risk among their patients. It is worth noting here, however, that less than 5% of these BHCs' total caseloads involved managing patients at a moderate risk for suicide. It is possible that in other settings where BHCs' caseloads could contain a greater number of patients requiring this more intensive safety planning intervention, burnout would become an issue. The infrequent occurrence of behavioral health patients who required safety planning in the present study likely contributed to the BHCs' willingness to accommodate these patients by making adjustments to their schedules (e.g., rescheduling other patients, sacrificing their protected administrative time).

The qualitative data regarding patient perceptions of the intervention suggest most patients found the crisis response planning intervention helpful, and very few had any concerns about the implementation of such an intervention in the PCBH model. Some participants mentioned being grateful for the availability of this intervention as an alternative to long-term

therapy, hospitalization, or medication, which suggests offering safety planning in a PCBH setting helped reduce the stigma that often surrounds seeking help from mental health professionals. More than one participant had had the experience of being hospitalized after disclosing suicide risk to their PCP, and their experiences of hospitalization were generally unpleasant. Thus, these participants felt relieved that they were able to maintain personal control and responsibility for keeping themselves safe, rather than having their decision-making capacity taken from them. These findings are consistent with previous work suggesting patients are often still at heightened risk for suicide after being discharged from inpatient settings, and that as such, hospitalization should be avoided if possible (Chung et al., 2017). Other participants spoke about the convenience of being able to meet with the BHC immediately after their medical appointments and in the same clinical space. Finally, a few participants noted that without the warm handoffs from their PCPs, they would not have attended their recommended behavioral health appointments. These findings are all consistent with benefits of the PCBH model that are documented in the extant literature (e.g., Cummings et al., 2009; Robinson & Reiter, 2016). As such, it seems the benefits of the PCBH model are maintained, even when implementing a crisis response planning intervention.

Although patients' comments regarding the PCBH model were largely positive, one patient did report feeling upset by the brevity and limited frequency of visits within the PCBH model. Of note, this patient had an extensive trauma history that she disclosed to her BHC during the assessment phase of the session, and when the BHC offered to facilitate a referral to a more long-term therapist the patient reported feeling overwhelmed by the notion of having to tell another therapist about her traumatic past. Although this was only one instance, this finding speaks to the importance of BHCs clarifying expectations about the nature and scope of services

within the PCBH model at the outset of every visit (Robinson & Reiter, 2016), even when patients come in highly distressed and want to disclose their presenting problems immediately. Although there may be certain clinical presentations for which treatment within a PCBH model is less appropriate, implementation of a crisis response planning intervention was still thought to be the best response for this person in the moment, given the level of suicide risk she endorsed. Future research is needed to further elucidate the types of clinical presentations and levels of suicide risk that are most appropriate for continued management in primary care after collaborative creation of a crisis response plan. Overall, study findings suggest implementing this safety planning intervention in PCBH was largely seen as acceptable by PCPs, BHCs, and patients.

Feasibility

As hypothesized, study findings support the feasibility of implementing a brief crisis response planning intervention in PCBH. When asked how this intervention fit within the rapid pace of primary care, participating BHCs reported that although it usually took them about an hour to complete the in-depth risk assessment and safety planning intervention, they felt this intervention was both feasible and easily implemented. Furthermore, they noted that appropriate management of suicidal patients generally takes longer than a typical 30-minute behavioral health visit regardless, and said this intervention did not include any unnecessary components that made it feel needlessly long. It is worth mentioning, however, that in addition to the participating BHCs, three other full-time BHCs (all licensed clinical social workers) were trained in the study protocol but chose not to adhere to it, likely because they thought adding a research component (e.g., recruiting patients and collecting measures) to clinical care would create additional burden for them and interfere with patient flow. Although the participating BHCs

explained that the research components of the study protocol did not create additional burden above and beyond standard patient care, some of them did admit this was a worry they had held initially. It seems they only came to realize the research components were not burdensome after actually running patients through the study protocol.

BHCs in the present study highlighted various adaptations they made to their schedules to accommodate these longer visits without compromising care for other patients, such as offering to see patients whose appointments had to be canceled or delayed during lunch or administrative time, or shortening other follow-up appointments to 15 minutes in order to fit them in. Robinson and Reiter (2016) describe the ideal BHC as being flexible, high energy, and a team player. They go on to say that in their experience, the success of a BHC depends more on these traits than on their specific degree or clinical training. It seems the BHCs tasked with offering the intervention in the present study possessed these traits, which likely contributed to their success in being able to offer this intervention well in a PCBH setting. Although some of the BHCs did note it occasionally presented difficulties (i.e., being the only BHC in the clinic meant that while they were managing suicidal patients they were briefly unavailable for other consults), they agreed that the utility of this intervention superseded any scheduling concerns.

As noted above, a very small percentage of these BHCs' appointments involved managing patients at a moderate risk for suicide. Although participating BHCs were frequently the only mental health professional available in their respective clinics during any given day, they were surrounded by supportive nursing and administrative staff that were willing to assist them in rescheduling patients as needed to accommodate the longer crisis response planning visits. Furthermore, all BHCs who participated in this study had a clinical supervisor available for consultation via telephone as needed, who consulted with them on every suicidal patient they

saw. This clinical support in the moment and during weekly supervision meetings likely provided some protection against BHC burnout. Study findings suggest the sustainability of BHCs being willing and able to implement in-depth risk assessments and safety planning interventions with patients at a moderate risk for suicide may be dependent on certain conditions being met. Ideally, BHCs implementing this intervention would have relatively few patients with a need for this intensity of risk management, a supportive nursing staff to assist them with rescheduling patients when needed, and a team of additional BHCs to help meet other behavioral health needs of the clinic when crisis management sessions run long.

Of note, the BHCs in the present study received only a brief 2-hour training on how to conduct the risk assessment and safety planning intervention, with supervision and consultation provided as needed. Furthermore, most of the BHCs had not had prior experience managing suicidal patients. Nonetheless, all of the BHCs agreed that having access to the Qualtrics risk assessment tool and providing safety planning in PCBH added greatly to their clinical training. They explained that this experience improved their comfort and skill assessing suicide risk because they had access to a tool that clearly outlined all of the aspects they needed to cover in a thorough risk assessment. Taken together, these findings suggest it did not require a time- or resource-intensive training period to adequately prepare BHCs to deliver this intervention, and BHCs were able to conduct in-depth risk assessments and safety planning for suicidal patients without significantly compromising the flow of patient care within the PCBH model.

Findings regarding attendance of behavioral health appointments speak to the feasibility of this intervention from a patient perspective. Most patients (77.3%) attended at least one scheduled follow-up appointment, and almost half of them attended all of the follow-up appointments scheduled in their episode of care. Importantly, this “treatment completion” rate

exceeds rates generally seen in PCBH settings, which tend to fall between 28 and 40% (Bridges et al., 2014; Corso et al., 2012). Qualitative data from at least one BHC corroborates the finding that patients receiving this intervention attended follow-up visits at a higher rate than other patients receiving behavioral health services. As this BHC noted: "*The patients typically follow-up, after doing the risk assessment. And they come to their appointments consistently. That says a lot about the rapport I have with them, and that they feel they are getting something out of what we're doing. I don't think they'd come back if it wasn't helpful."* Even though patients participating in the present study attended more follow-up visits than behavioral health patients more generally, there were still fairly high rates of eventual dropout, and around one in five did not attend the first follow-up visit scheduled after the crisis response planning intervention. Although I did not gather data on why patients did not attend scheduled appointments, some patients spontaneously mentioned logistical barriers that interfered with attendance (e.g., difficulties finding transportation or childcare). For instance, one participant said: *"It was hard to get a ride to Siloam Springs every week. I've thought about it off and on since then - I should have called and said something to her. I just stopped going. Please let [BHC NAME] know I only stopped going because I didn't have a way to get there."* As such, it seems that even in the PCBH model, logistical barriers persisted, especially for low-income patients who lived in rural areas. Despite the fact that around 20% of patients in the present study only attended one behavioral health appointment and more than half did not complete their episode of care, they still showed treatment gains at follow-up. This is consistent with Bryan and colleagues' (2017a) findings suggesting crisis response planning may be effective as a stand-alone intervention that can be feasibly delivered in as little as one visit.

Although some patients experienced logistical barriers that prevented them from attending all of their scheduled appointments, other participants mentioned logistical barriers that were minimized by virtue of offering this intervention in PCBH instead of specialty mental health care. For example, one patient said: *"I'm glad I could just go to talk to [BHC NAME] right there. I didn't even have to leave the building, I didn't have to be escorted anywhere, I didn't have to wait for an appointment, I just got to go right in and speak with her. Also I have Medicaid, and a lot of the therapists around here don't take Medicaid, so I like that I don't have to pay for it when I see [BHC NAME]."* These findings are consistent with previous work demonstrating that PCBH reduces service utilization barriers for patients (Bridges et al., 2014).

Clinically, findings from the present study suggest that for patients at a moderate risk for suicide, risk can be reduced with a relatively simple patient-level intervention focused on outlining concrete steps patients can take when in the midst of emotional crises. The fact that this intervention is brief and straightforward suggests it could feasibly be implemented in a diverse range of settings (e.g., hospitals, counseling centers, schools). Given the prevalence of suicidal thoughts and behaviors in the general population and the relatively small percentage of suicidal individuals who seek help in specialty mental health care settings, future research should certainly continue to explore the feasibility of applying this brief intervention in other clinical and community settings.

Limitations and Future Directions

The results of this study must be considered in light of several limitations. First, the present study was quite underpowered, which means treatment effects were likely missed. Although I aimed for a sample size of 36 people, time constraints and a limited number of participating BHCs limited my ability to obtain the desired sample size. The sample size I

achieved suggests I was adequately powered to detect effects of a large magnitude for t-tests and ANOVAs. Therefore, it is probable small to medium within-session effects were missed in the present study. I aimed to address this limitation by prioritizing interpretation of effect sizes and descriptive data above statistical significance. Still, future studies should aim to replicate these findings with a much larger sample of patients.

Second, the study design limits my ability to ascribe improvements solely to the brief crisis response planning intervention. Although a number of ethical considerations precluded use of a multiple baseline design or random assignment of participants to control or treatment-as-usual comparison groups, the lack of a rigorous experimental study design limits the conclusions that can be drawn from this work. For instance, it is possible improvements seen at the 4-month follow-up time point simply reflected a regression to the mean effect, or were for reasons unrelated to the crisis response planning intervention (e.g., physical health problems and resource deficits being addressed in the patient-centered medical home, other circumstantial environmental changes). It is less likely that external factors would have influenced the measurements taken immediately following the crisis response planning intervention, but this could still be possible (e.g., improvements due to common factors of therapeutic intervention rather than active ingredients of the safety planning intervention). Future studies should endeavor to find and utilize ethical applications of random assignment in effectiveness trials related to suicide risk, to allow for a clearer understanding of what changes are due to the active ingredients of the intervention versus other confounding variables.

Relatedly, study findings highlight the importance of elucidating which treatment components impact different outcomes. For example, it seems the active ingredients associated with creating the crisis response plan were related to changes in patients' coping efficacy and

suicidal intent, but not to changes in patients' hope. Qualitative findings also underscore the importance of the therapeutic relationship, but it is unclear from these data which treatment outcomes were most strongly related to the therapeutic relationship. That is, although patients and BHCs agreed that having a positive relationship was helpful, it was unclear whether the therapeutic relationship impacted suicidal intent, coping efficacy, or hope specifically. Future research should attempt to improve measurement specificity and parse apart the impact of specific treatment components on various outcomes related to suicide risk.

Third, the outcome measures in the present study were extremely limited, in that three of the constructs related to suicide risk were assessed using a single item measure. It is possible the way these constructs were measured was insufficient to adequately or accurately capture changes across time. For example, the decision to use a future-oriented item assessing hope may have impacted my findings in an unexpected way. Relatedly, I did not have any psychometric information (e.g., test-retest reliability) for the single-item ratings of intent, coping efficacy, or hope used in the present study. It is particularly difficult to measure test-retest reliability among individuals who are actively suicidal, because of the necessity to act on suicidal crises as soon as they occur. This is another study design challenge related to conducting research with people who are in crisis. Further research should attempt to replicate these study findings using more extensive and psychometrically valid measures of the variables of interest in order to better speak to the role of safety planning in reducing suicide risk.

Fourth, the measurement time points in the current study gave a very limited view of patients' suicide risk over time. Suicide risk is known to be dynamic and fluctuate over time (Rudd, 2006, Kleiman et al., 2017). Thus, having only two measurement time points (i.e., one immediately following the safety planning intervention and one at a 4-month follow-up) likely

limited my ability to see an accurate picture of how participants' suicide risk changed across time. Future studies should incorporate more frequent follow-up measurements or ecological momentary assessment (Shiffman, Stone, & Hufford, 2008) to more accurately map the change in participants' suicide risk over time following a crisis response planning intervention.

A fifth limitation of the present study involves the lack of fidelity checks to ensure BHCs were truly following the study protocol correctly. The coding of practice components as noted in patient charts was retrospective, and relied wholly on what BHCs documented at the time of the visit. If there were additional treatment components offered beyond what was included in visit notes, I had no way of knowing this. Similarly, if the BHC's note indicated they did something that in reality they did not do, I was unable to detect this. Future studies should include greater fidelity checks, and perhaps incorporate un-biased external coders who could observe and codify BHCs' delivery of intervention components in real-time. Relatedly, I served as the sole interviewer and coder for qualitative data analyses. Interviews with participants were not audio recorded, instead I took concurrent notes on participant responses while conducting each interview. Although I made an effort to capture everything patients said during the follow-up interviews, my notes are necessarily filtered through my perspective about what constituted key points within participant responses. In order to speak more fully to the reliability of the codes and themes I identified, it would have been beneficial to audio record and transcribe interviews word-for-word, and enlist a second coder to read through interview transcripts and independently generate their own set of codes.

This study also relies on self-report data, which have several well-known limitations (Nisbett & Wilson, 1977; Takarangi, Garry, & Loftus, 2006). Most relevant to the present study, participants' retrospective reports of past suicidal thoughts and behaviors, as well as participants'

recollection of the intervention components at the 4-month follow-up time point, were likely subject to recall biases. Indeed, some research suggests caution is especially warranted when utilizing self-report data to assess cognitive and affective processes (e.g., participants' attributions about why they are or are not feeling suicidal), because some of these processes may operate outside of conscious awareness (Nisbett & Wilson, 1977).

Finally, the decision to only focus on patients at a moderate risk for suicide limits my ability to generalize results from this study to individuals who are either at a lower risk (i.e., only endorsing passive ideation with few other risk factors) or a higher risk (i.e., active ideation with developed plan and intent, in need of hospitalization) for suicide. However, the decision to conduct this study with patients at a moderate risk for suicide in a primary care behavioral health setting also represents a strength of the present study. In general, the suicide prevention literature lacks effectiveness trials that assess whether specific treatments work in real-world settings. Testing the effectiveness of a brief crisis response planning intervention as it is realistically applied in a primary care setting, with inclusion and exclusion criteria that are reflective of patients who present to treatment in the real world, increases the external validity of my findings.

Conclusion

Taken together, findings from the current study speak to the effectiveness, acceptability, and feasibility of a brief crisis response planning intervention delivered in the PCBH setting. Patients and providers alike found this intervention to be beneficial, and very few expressed concerns with its implementation in this model. Patients receiving the crisis response planning intervention demonstrated immediate reductions in suicidal intent, and reported feeling increased hope and coping efficacy as a result of the intervention. No patients receiving this intervention went on to make subsequent suicide attempts in the four months after the intervention, and all

patients reported a reduction in severity of past-month suicidal ideation at the 4-month follow-up time point. Patients' comments about what was helpful seemed to focus on both the active ingredients of the intervention (i.e., psychoeducation, enhancement of coping skills, activation of social supports) and the importance of having a positive therapeutic relationship with their BHC. BHCs agreed that a positive therapeutic alliance was essential to this intervention, and that both active treatment components and common factors of psychotherapy seemed to play a role in patient improvements. Although preliminary, these results suggest even moderate suicide risk can be managed by BHCs in this model.

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Tables

Table 1

Suicide terms and definitions

Term	Definition	Example
Passive ideation	Thoughts about one's death without suicidal or self-enacted injurious content	"I just wish I did not have to wake up tomorrow"
Suicidal ideation without intent	Thoughts about engaging in suicidal behavior, but without the wish to die	"Sometimes I think it would be easier to just kill myself, but I would never go through with it"
Suicidal ideation with intent	Thoughts of ending one's life	"I want to kill myself"
Non-suicidal self-injury	Deliberate self-inflicted injury, but without intent to die	Cutting arms and legs
Preparatory behaviors	Acts or preparation towards engaging in self-directed violence, but before potential for injury has begun	Hoarding medication for the purpose of overdosing
Suicide planning	An individual's thinking about a suicide attempt that includes elements such as a timeframe, method, and place	"If I were to kill myself, I would do so by overdosing on my prescription painkillers"
Suicide attempt	A nonfatal, self-directed, potentially injurious behavior with any intent to die as a result of the behavior. A suicide attempt may or may not result in injury	Attempt to overdose on painkillers, but taken to the hospital to be treated
Suicide	Death caused by self-directed injurious behavior with any intent to die as a result of the behavior	Death as a result of deliberate self-inflicted gunshot

Table 2

Descriptive statistics of study sample

Variable	Full Sample (N = 22)		Subsample (n = 16)		X^2 or t statistic
	n or *M*	% or *SD*	*n* or *M*	% or *SD*	
Age (range 18-53 years)	25.91	8.83	24.75	6.49	$t(36) = 0.45$, $p = .659$
Gender					$X^2(1) = 0.37$, $p = .542$
Male	6	27.3%	3	18.8%	
Female	16	72.7%	13	81.3%	
Ethnicity					$X^2(2) = 1.00$, $p = .605$
Non-Latinx White	16	72.7%	11	68.8%	
Latinx	5	22.7%	5	31.3%	
Native American	1	4.5%	0	0%	
Study Site					$X^2(3) = 0.12$, $p = .989$
Pat Walker Health Center	14	63.6%	10	62.5%	
Community Clinic – Springdale	3	13.6%	2	12.5%	
Community Clinic – Siloam	3	13.6%	2	12.5%	
Community Clinic - Rogers	2	9.1%	2	12.5%	
Most severe SI at study enrollment					$X^2(5) = 1.43$, $p = .921$
Wish to be dead	1	4.5%	1	6.3%	
Non-specific active SI	4	18.2%	4	25.0%	
Active SI with any methods (not plan), without intent	4	18.2%	4	25.0%	
Active SI with some intent to act, without specific plan	1	4.5%	0	0%	
Active SI with plan, without intent	9	40.9%	5	31.3%	
Active SI with plan and intent	3	13.6%	2	12.5%	
Suicide Attempt History					$X^2(1) = 0.00$, $p = 1.00$
Yes	11	50.0%	8	50.0%	
No	11	50.0%	8	50.0%	
Number of BH follow-up visits attended	2.27	1.86	2.06	1.73	$t(36) = 0.35$, $p = .725$
0	5	22.7%	4	25.0%	
1	3	13.6%	2	12.5%	
2	5	22.7%	4	25.0%	
3	3	13.6%	3	18.8%	
4 or more (up to 6)	6	27.3%	3	18.8%	

Table 3

Descriptive information about study sites

Variable	Community Clinic - Springdale	Community Clinic - Rogers	Community Clinic - Siloam Springs	Pat Walker Health Center
Number of unique patients seen in past year	13,464	10,714	2,100	11,218
Average patient age, in years	28	27	38	24
Number of patients referred for behavioral health	1,068	829	204	211
% at or below 200 percent of the federal poverty level	73%	68%	63%	unavailable
% Latinx ethnicity	57.8%	58.9%	44.0%	5.3%
% uninsured	35.0%	35.1%	39.7%	unavailable
% female	61.2%	59.9%	61.7%	60.5%
% pediatric (<18 years)	19.7%	23.6%	6.4%	0.2%
Number of full-time medical providers	7.5	7	2	10.2
Number of full-time behavioral health providers	4	2.5	.5	.5

Table 4

Measurement plan

Measure	Baseline/Start of treatment	End of first treatment visit	Subsequent treatment visits	Four-month follow-up
Suicide Screening Items	X			
C-SSRS	X			X
Single-item measures of hope, efficacy, and intent	X	X	X	X
SCS-S	X	X		X
ACORN		X	X	X
Practice Components Checklist		X	X	
Open-ended questions about crisis response planning intervention				X

Table 5

Most severe suicidal ideation score at pre-treatment and follow-up

ID	Most Severe Suicidal Ideation in Past Month			
	Pre-treatment	Follow-up	Improved	Eliminated
1	5	0	Y	Y
2	3	1	Y	N
3	5	0	Y	Y
4	3	0	Y	Y
5	5	-	-	-
6	5	0	Y	Y
7	5	3	Y	N
8	5	2	Y	N
9	6	-	-	-
10	6	3	Y	N
11	2	1	Y	N
12	2	2	N	N
13	1	0	Y	Y
14	3	0	Y	Y
15	6	0	Y	Y
16	3	0	Y	Y
17	2	0	Y	Y
18	2	0	Y	Y
19	5	-	-	
20	5	-	-	
21	5	-	-	
22	4	-		

Note. Severity of ideation is rated on a 7-point scale in which 0 = *no suicidal ideation*, 1 = *wish to be dead*, 2 = *nonspecific active suicidal thoughts*, 3 = *active suicidal ideation with any methods (not plan) without intent to act*, 4 = *active suicidal ideation with some intent to act, without specific plan*, 5 = *active suicidal ideation with specific plan, without intent*, 6 = *active suicidal ideation with specific plan and intent.* Improved = Severity of ideation was reduced at follow-up. Eliminated = Participant reported no suicidal ideation at follow-up. Y = yes. N = no.

Table 6

Bivariate correlations between crisis response plan strength scores and change in treatment outcomes across time

Measure	1	2	3	4	5	6	7	8	9	10	11	12
1. Overall Strength of Crisis Response Plan	--											
2. Strength of Coping Skills	.80**	--										
3. Strength of Distractions	.86**	.67**	--									
4. Strength of Social Supports	.50*	.38	.02	--								
5. Strength of Means Restriction	.63*	.27	.41	-.42	--							
6. Strength of Reasons for Living	.44	.20	.37	-.58*	.56*	--						
7. Δ Intent (pre to post)	.31	-.03	.39	-.21	.27	.66*	--					
8. Δ Coping Efficacy (pre to post)	.62*	.56*	.36	.56	.37	.26	.07	--				
9. Δ Hope (pre to post)	.23	.18	.16	.49	-.48	-.30	.08	.44	--			
10. Δ Intent (pre to follow-up)	.13	.23	-.07	.40	-.15	.07	-.19	.20	-.45	--		
11. Δ Coping Efficacy (pre to follow-up)	.17	.02	.18	.19	-.07	.10	-.03	.73*	.01	.27	--	
12. Δ Hope (pre to follow-up)	-.37	-.31	-.26	.05	-.42	-.19	-.24	.50	.49	.06	.49	--

Note. *$p < .05$, **$p < .01$. Intent correlations were calculated using the log-transformed intent variable.

Table 7

Frequency of follow-up interview themes

Theme	Number of participants identifying theme	Percentage of participants identifying theme
What do you remember about the safety planning intervention you completed with the clinician during your first visit?		
Safety Plan Components	16	100%
Emotional Reaction	4	25%
Characteristics of BHC	3	18.8%
What, if anything, did you find most helpful about that visit?		
Characteristics of BHC	10	62.5%
Safety Plan Components	8	50%
Appreciated this intervention as an alternative to others	3	18.8%
Felt empowered	3	18.8%
Increased hope	3	18.8%
Normalized talking about suicide	2	12.5%
Connection with resources	1	6.3%
What, if anything, did you find unhelpful about that visit?		
Nothing	12	75%
Barriers not specific to intervention or PCBH model	2	12.5%
Brevity of PCBH model	1	6.3%
Characteristics of BHC	1	6.3%
Procedure of being referred to CAPS	1	6.3%
Do you have any additional feedback you'd like to share?		
Appreciated the PCBH model	2	12.5%
Made suggestions for other helpful interventions	1	6.3%

Note. These data are from the 16 participants who have participated in the follow-up interview thus far.

Table 8

Frequency of participant responses to yes/no questions about perceptions of the intervention

Item	Number of participants endorsing item	Percentage of participants endorsing item
I learned how to identify the onset of a suicidal crisis	11	68.8%
I learned better coping strategies for how to deal with a suicidal crisis	13	81.3%
I felt more hopeful about the future	14	87.5%
I felt more confident I could handle future suicidal crises	13	81.3%
I appreciated the opportunity to talk to someone about my problems	15	93.8%

Note. These data are from the 16 participants who have participated in the follow-up interview thus far.

Table 9

Frequency of BHC interview themes

Theme	Number of BHCs identifying theme	Percentage of BHCs identifying theme
Questions related to patient impact		
What parts of the intervention did your patients respond well to?		
Therapeutic relationship	3	100%
Creation of safety plan	2	66.7%
Having an open conversation about suicide risk	2	66.7%
Patients were engaged in intervention	2	66.7%
What parts of the intervention did your patients respond less well to?		
Specific safety plan components	2	66.7%
Risk assessment was repetitive	1	33.3%
Nothing	1	33.3%
What seemed to be the most important or useful parts of the safety plan to your patients?		
Warning signs	2	66.7%
Social supports	2	66.7%
Reasons for living	2	66.7%
Coping skills	1	33.3%
Useful distractions	1	33.3%
What was your impression of how the therapeutic relationship came into play during this intervention?		
Positive rapport is essential when discussing suicide	3	100%
BHC actions and qualities that facilitate rapport	1	33.3%
Questions related to delivering safety planning in PCBH		
How did this intervention fit within the flow of primary care?		
Took longer than typical behavioral health visits	3	100%
Felt feasible	2	66.7%
BHC flexibility and problem-solving to improve patient care	2	66.7%
Utility of intervention superseded scheduling concerns	2	66.7%
Difficulties	2	66.7%
How did PCPs in your clinic respond to your management of suicidal patients with this intervention?		
Positive reaction	3	100%
Benefits to PCP	2	66.7%
Collaborative process	2	66.7%
PCPs were often surprised to learn about patients' suicide risk	2	66.7%

Table 9 (Cont.)

Theme	Number of BHCs identifying theme	Percentage of BHCs identifying theme
Questions related to impact on BHCs		
How did the experience of providing this intervention in PCBH impact your clinical training?		
Benefitted training	3	100%
First experience managing suicide risk	2	66.7%
Recommended risk assessment tool to others	1	33.3%
Questions related to utility of Qualtrics risk assessment tool		
What were your impressions of the Qualtrics suicide risk assessment interview?		
Positive comments	3	100%
Negative comments	3	100%
Recommendations	2	66.7%

Note. These data are from the three BHCs who participated in one-on-one interview phone calls.

Figures

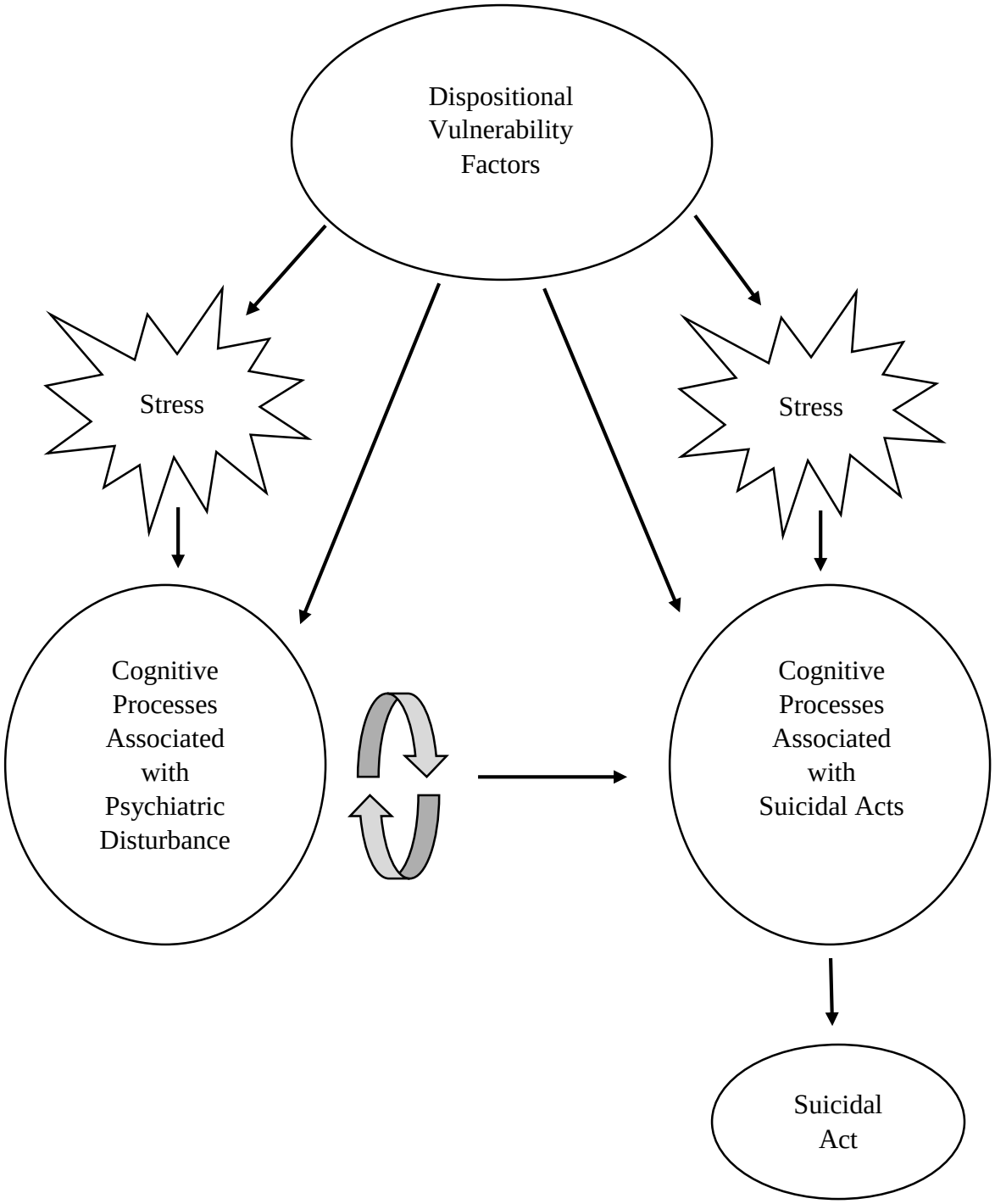

Figure 1. The comprehensive cognitive model of suicidal behavior (Wenzel & Beck, 2008).

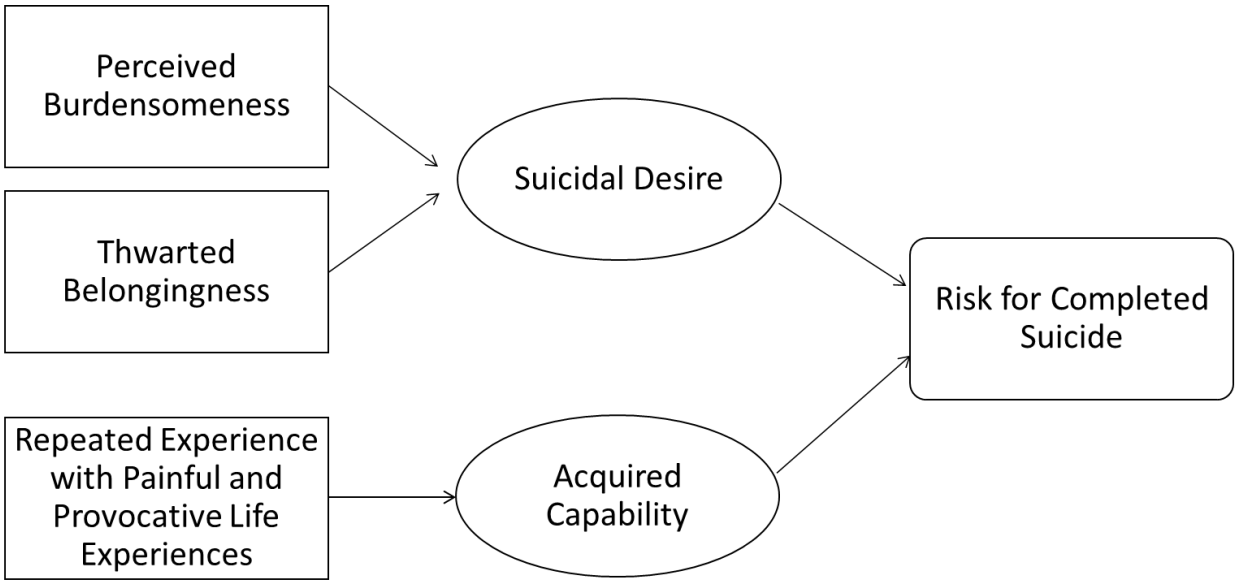

Figure 2. The interpersonal-psychological theory of suicide (Joiner, 2005).

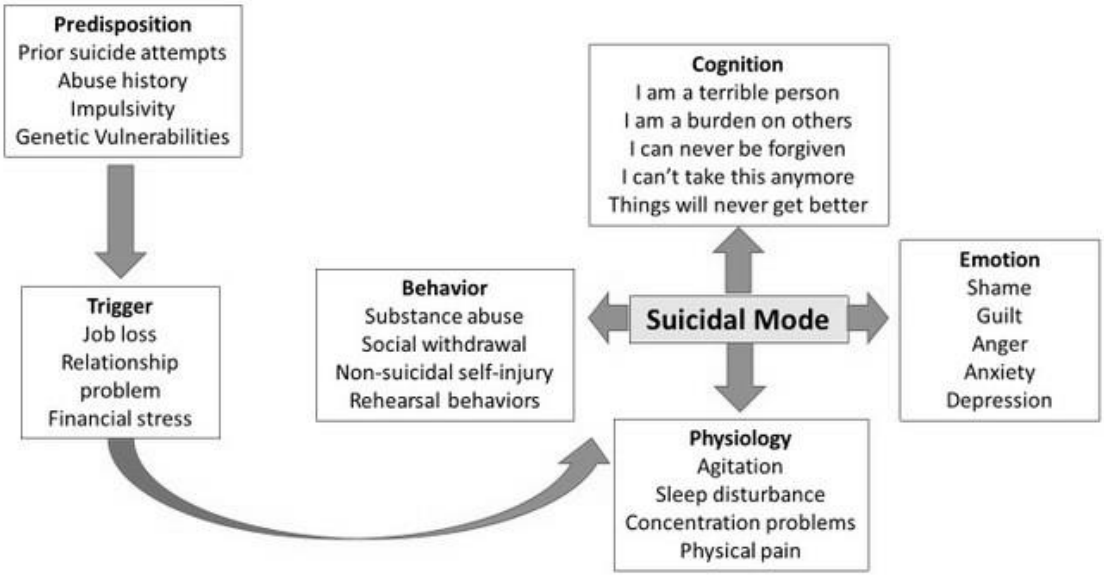

Figure 3. Fluid vulnerability theory and the suicidal mode (Rudd, 2006).

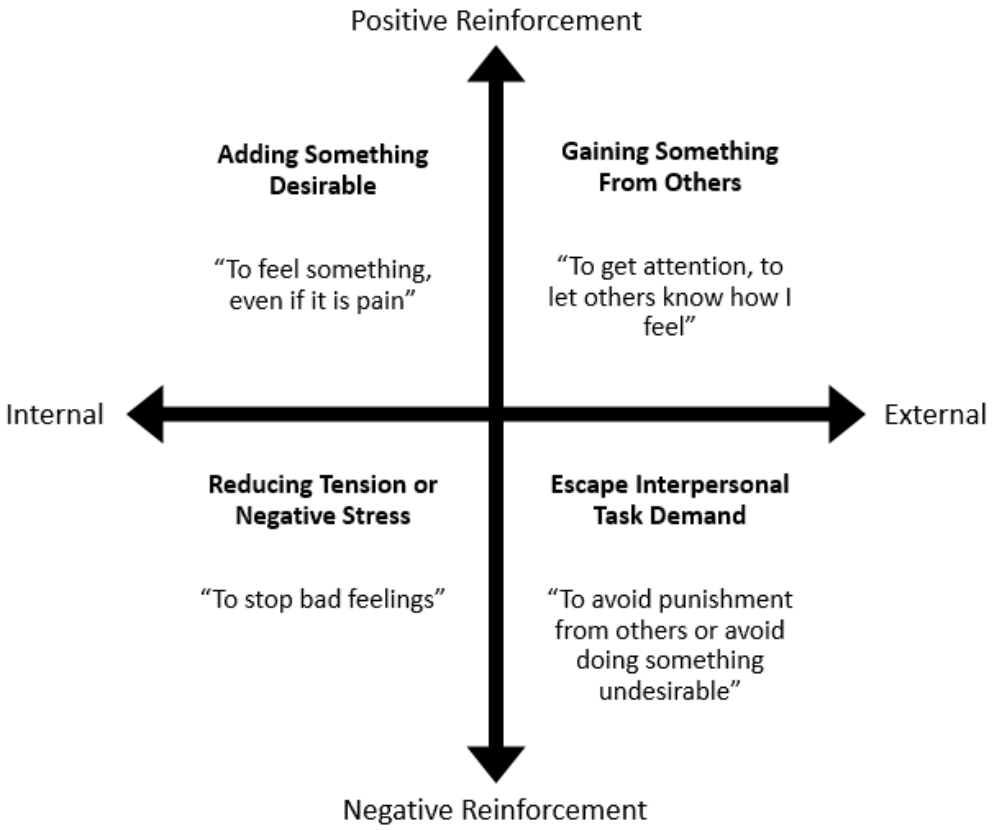

Figure 4. Functional model of suicide (Nock & Prinstein, 2004).

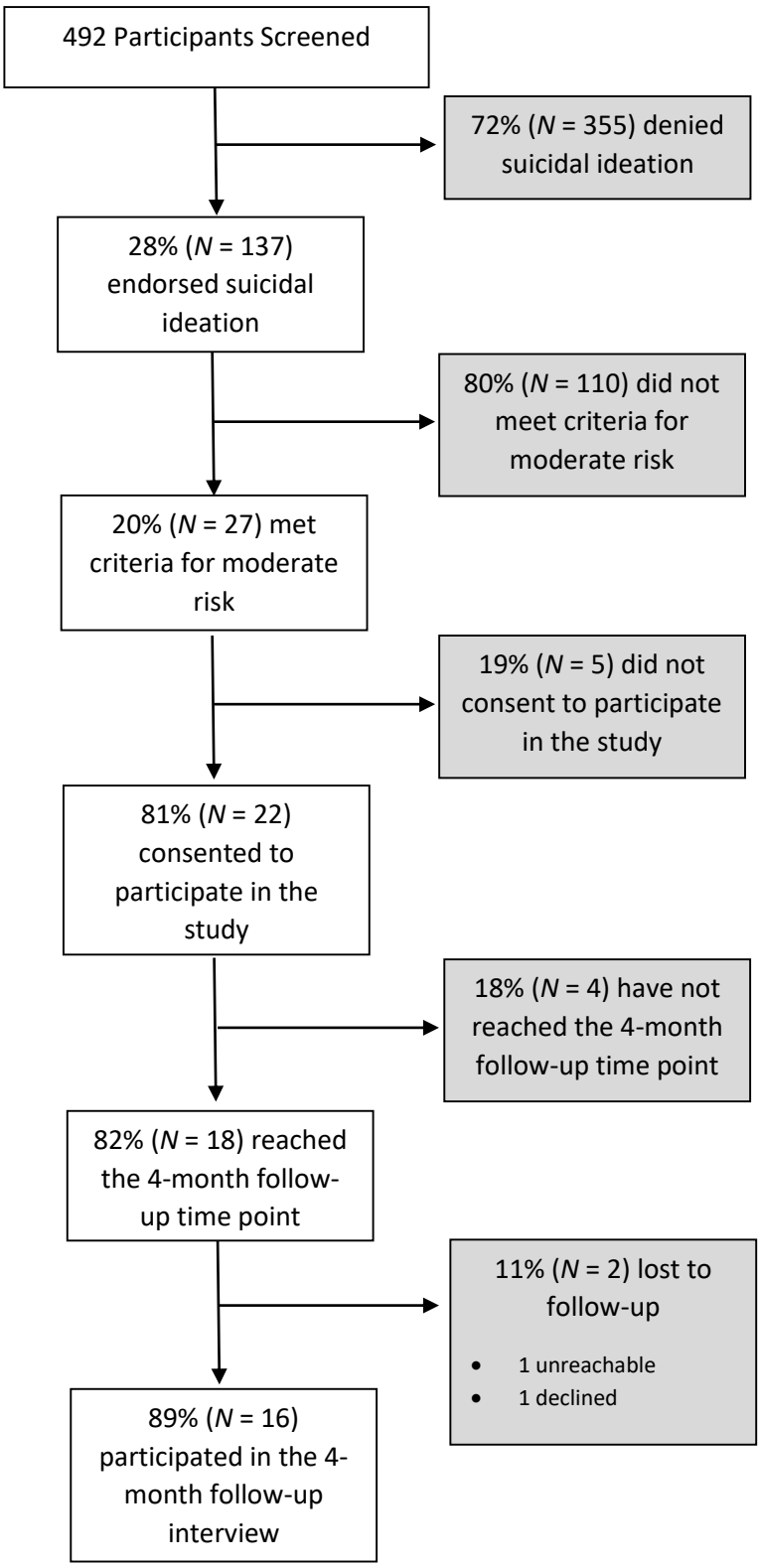

Figure 5. Participant enrollment

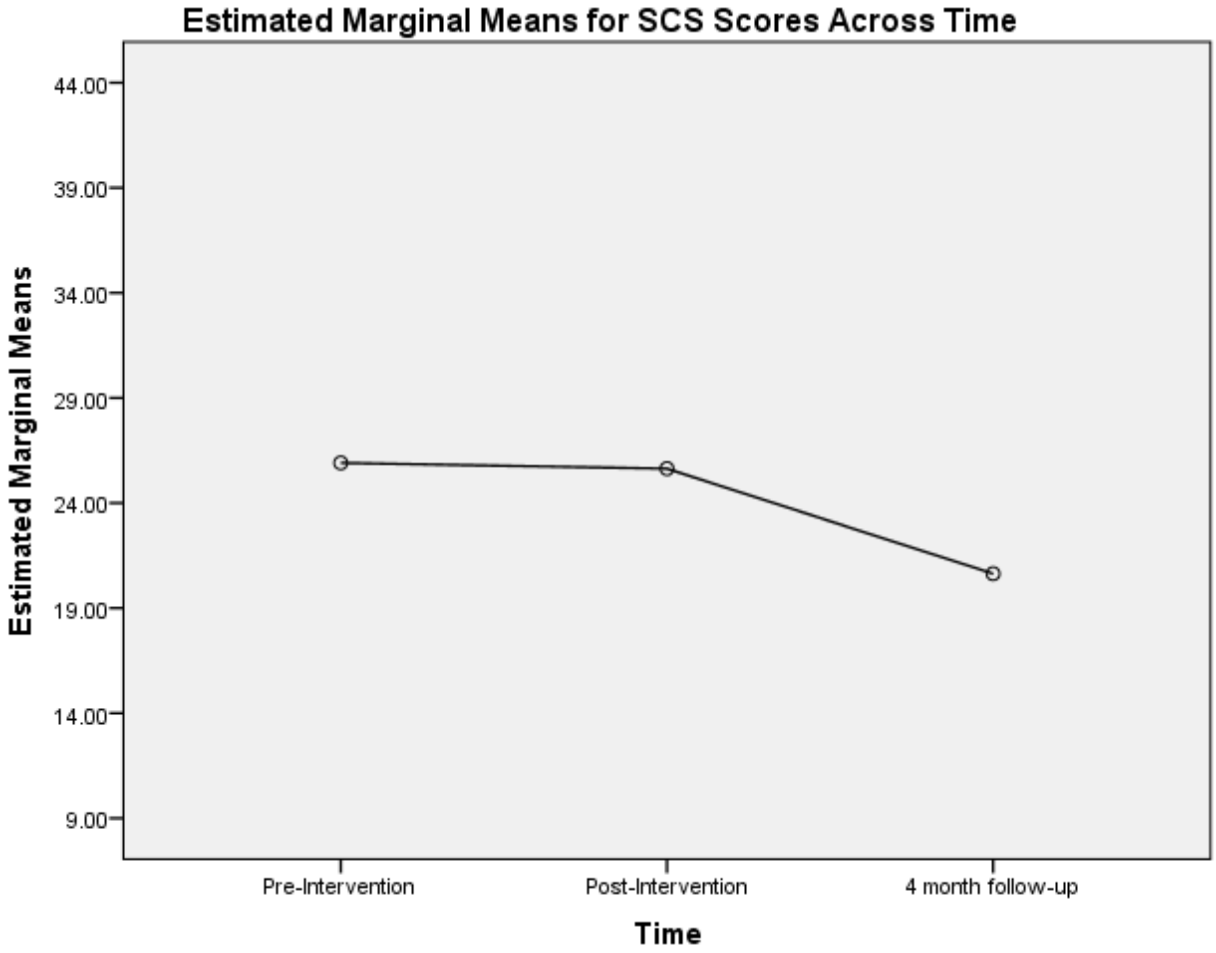

Figure 6. Estimated marginal means for suicidal cognitions scores across study time points.

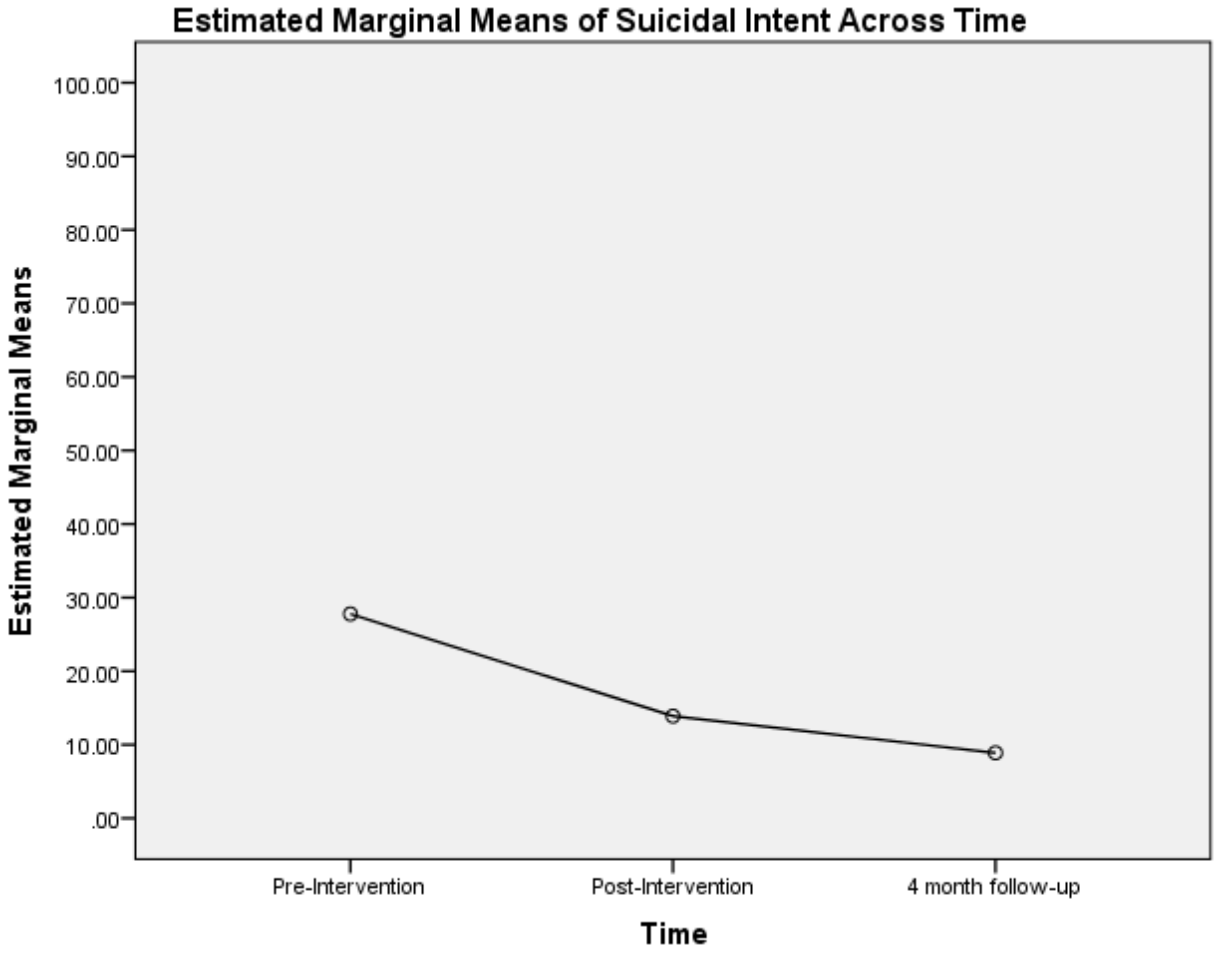

Figure 7. Estimated marginal means for suicidal intent across study time points.

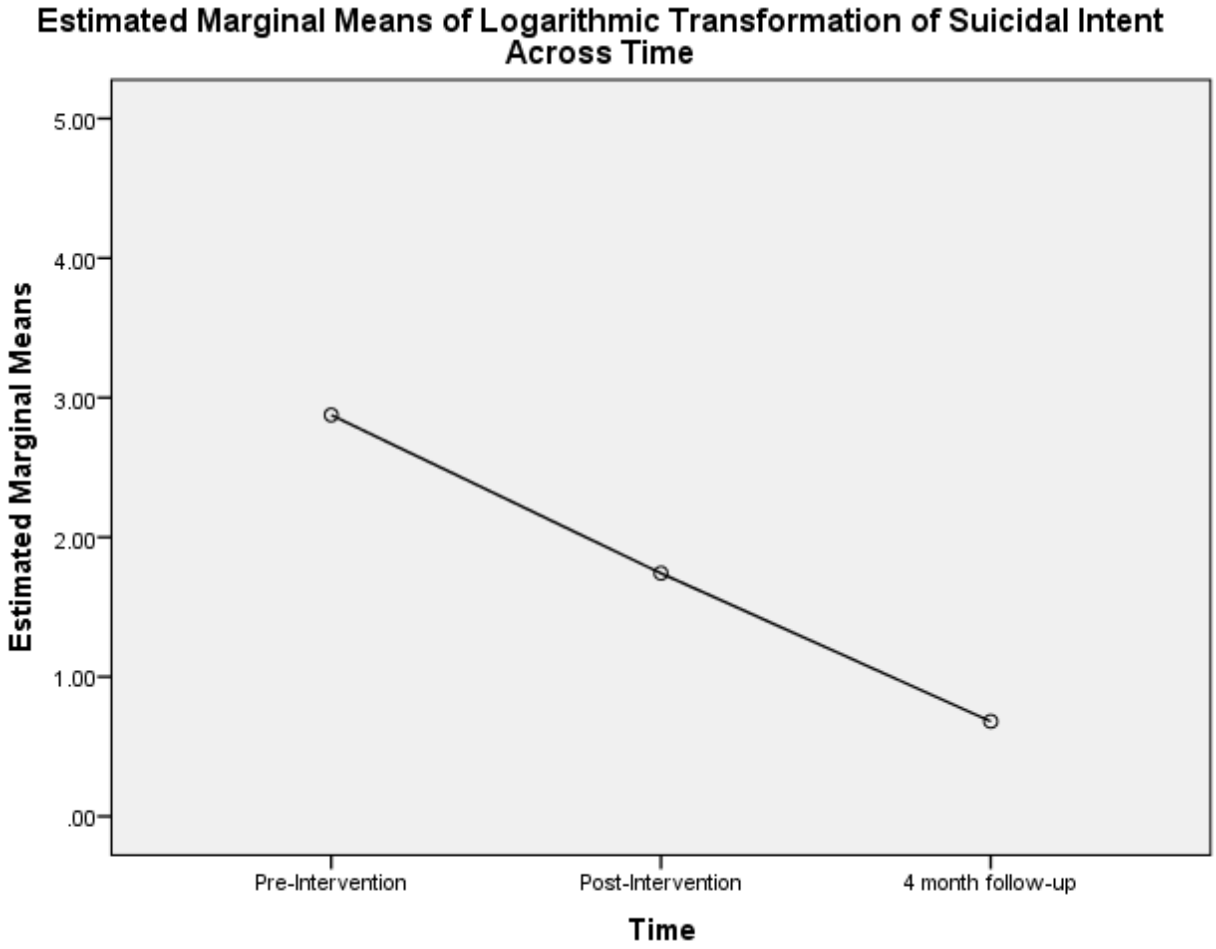

Figure 8. Estimated marginal means for logarithmic transformation of suicidal intent across study time points.

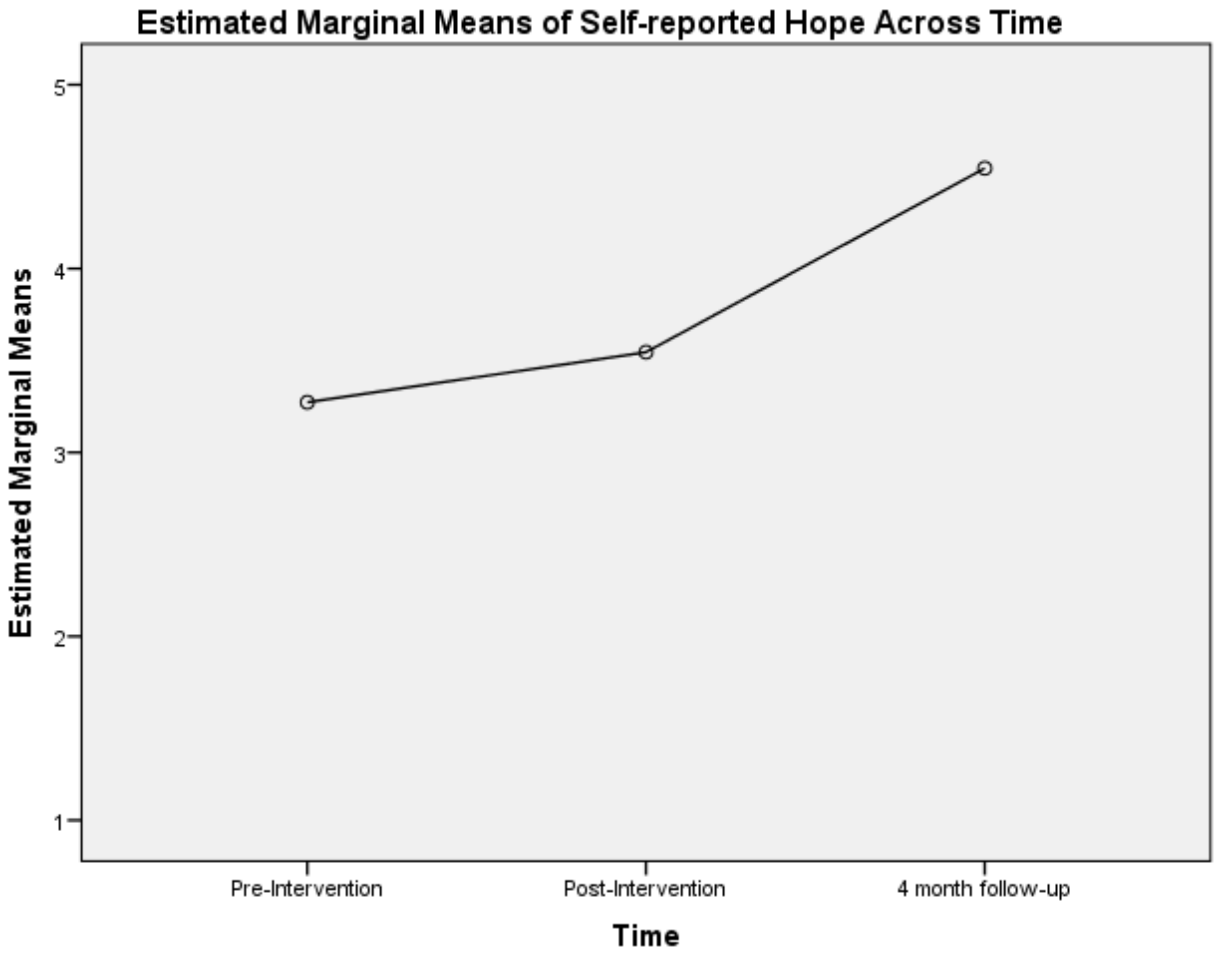

Figure 9. Estimated marginal means for self-reported hope across study time points.

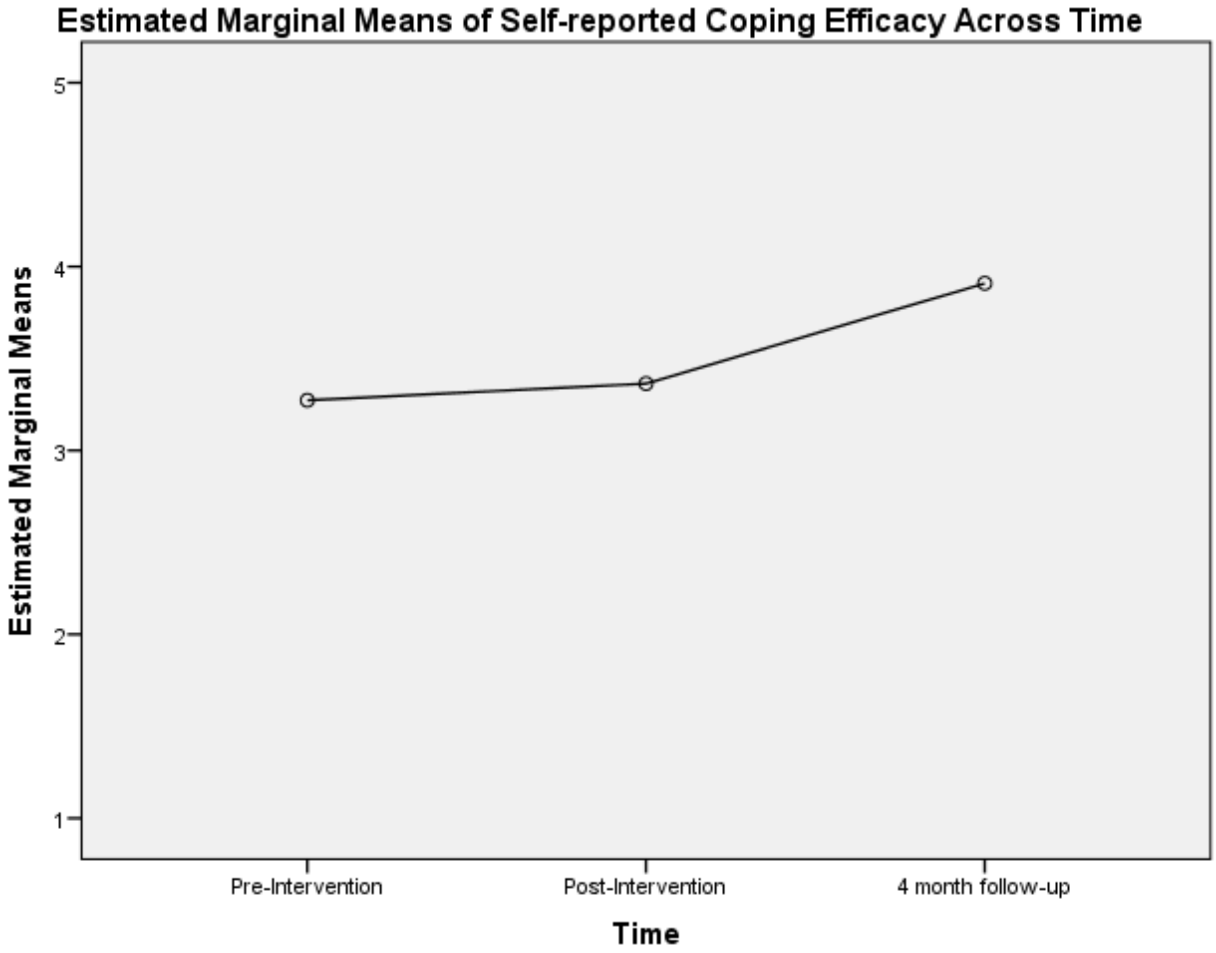

Figure 10. Estimated marginal means for self-reported coping efficacy across study time points

Appendices

Appendix A

UNIVERSITY OF ARKANSAS

Office of Research Compliance
Institutional Review Board

August 4, 2017

MEMORANDUM

TO:	Aubrey Dueweke Ana Bridges
FROM:	Ro Windwalker IRB Coordinator
RE:	PROJECT MODIFICATION
IRB Protocol #:	17-01-379
Protocol Title:	*Effectiveness of a Brief Intervention for Suicidality in an Integrated Care Setting*
Review Type:	☐ EXEMPT ☒ EXPEDITED ☐ FULL IRB
Approved Project Period:	Start Date: 08/04/2017 Expiration Date: 01/12/2018

Your request to modify the referenced protocol has been approved by the IRB. **This protocol is currently approved for 100 total participants.** If you wish to make any further modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

Please note that this approval does not extend the Approved Project Period. Should you wish to extend your project beyond the current expiration date, you must submit a request for continuation using the UAF IRB form "Continuing Review for IRB Approved Projects." The request should be sent to the IRB Coordinator, 109 MLKG Building.

For protocols requiring FULL IRB review, please submit your request at least one month prior to the current expiration date. (High-risk protocols may require even more time for approval.) For protocols requiring an EXPEDITED or EXEMPT review, submit your request at least two weeks prior to the current expiration date. Failure to obtain approval for a continuation *on or prior to* the currently approved expiration date will result in termination of the protocol and you will be required to submit a new protocol to the IRB before continuing the project. Data collected past the protocol expiration date may need to be eliminated from the dataset should you wish to publish. Only data collected under a currently approved protocol can be certified by the IRB for any purpose.

If you have questions or need any assistance from the IRB, please contact me at 109 MLKG Building, 5-2208, or irb@uark.edu.

Appendix B

Testing the Effectiveness of Brief Crisis Response Planning for Reducing Suicide Risk in Primary Care Behavioral Health Patients

Consent to Participate in a Research Study

Principal Researcher: Aubrey R. Dueweke, M.A.

Faculty Advisor: Ana J. Bridges, Ph.D.

INVITATION TO PARTICIPATE

You are invited to participate in a research study about behavioral health interventions for suicide risk in an integrated primary care setting.

WHAT YOU SHOULD KNOW ABOUT THE RESEARCH STUDY

Who is the Principal Researcher?
Aubrey R. Dueweke, M.A.
Department of Psychological Science
University of Arkansas
Fulbright College of Arts and Sciences
216 Memorial Hall
Fayetteville, AR 72701
479-575-7605
arduewek@email.uark.edu

Who is the Faculty Advisor?
Ana J. Bridges, Ph.D.
Department of Psychological Science
University of Arkansas
Fulbright College of Arts and Sciences
202C Memorial Hall
Fayetteville, AR 72701
479-575-5818
abridges@uark.edu

What is the purpose of this research study?

The purpose of this study is to examine the effectiveness of a brief behavioral health intervention for suicide risk delivered by mental health care professionals embedded in primary care. This research will help inform development of better suicide prevention efforts and treatments in the future.

What am I being asked to do?

You will be asked to fill out a few questionnaires before and after today's behavioral health visit. You will continue to receive treatment as normal, and as long as is clinically indicated. Regardless of how long you continue to receive treatment, you will be contacted by telephone roughly four months from today and asked to complete some follow-up questionnaires. It will take you approximately 10 minutes to complete today's measures, and 10 minutes to complete the follow-up measures. If you report clinically significant depression or suicide risk during our follow-up phone call, we are going to request that you attend another appointment with a behavioral health clinician at Community Clinic, Pat Walker Health Center, or another mental health facility or hospital. If you fail to follow through with a recommended appointment at this time we may call the police to check on your well-being.

In addition, we would like permission to access your electronic medical record to collect some additional data that could be important to this study. Specifically, we would like to gather information about the number of behavioral health visits you have attended, and the focus of any behavioral health visits you may attend between now and the follow-up portion of the study. We will not be accessing any other part of your electronic medical record, and all of your information will be kept confidential, to the extent allowable by law and University policy.

What are the possible risks or discomforts?
Although you may experience discomfort as a result of talking about your emotional experiences, participation in this study will not expose you to risk or discomfort exceeding that which is ordinarily encountered in daily life.

What are the possible benefits of this study?
Your participation will help improve suicide prevention and intervention efforts in the future. Additionally, you may feel a sense of relief from talking openly about your feelings, and doing so will help your provider make plans for coping and problem-solving around the factors that are causing you to feel suicidal. Finally, you will receive $10 for participation in today's portion of the study, and $10 for participation in the follow-up portion.

How long will the study last?
It will take you approximately 10 minutes (in addition to your normal behavioral health visit) to complete today's measures, and 10 minutes to complete the follow-up measures.

Will I receive compensation for my time and inconvenience if I choose to participate in this study?
You will receive $10 for participation in today's portion of the study, and $10 for participation in the follow-up portion.

What are the options if I do not want to be in the study?
If you do not want to be in this study, you may refuse to participate. Also, you may refuse to participate at any time during the study. Your relationship with the University of Arkansas will not be affected in any way if you refuse to participate.

How will my confidentiality be protected?
All information will be kept confidential to the extent allowed by law and University policy, and your individual answers will not be shared with anyone other than the researchers listed on this form except as required by law. However, if you report that you are considering harming yourself or that a child is currently being abused, we are required by law to take action to keep you and/or your child safe. For example, we may call the hospital or other emergency services. All data will be entered into a password protected computer file in a locked room in the faculty advisor's laboratory (Room 121 Memorial Hall). Study results will only be reported in a de-identified or group format, so your individual answers will not be traceable to you.

Will I know the results of the study?
At the conclusion of the study you will have the right to request feedback about the results. You may contact the faculty advisor, Ana J. Bridges, Ph.D. or Principal Researcher, Aubrey R. Dueweke, M.A. You will receive a copy of this form for your files.

What do I do if I have questions about the research study?
You have the right to contact the Principal Researcher or Faculty Advisor as listed below for any concerns that you may have.

Aubrey R. Dueweke, (479) 575-7605, arduewek@email.uark.edu

Ana J. Bridges, (479) 575-5818, abridges@uark.edu

You may also contact the University of Arkansas Research Compliance office listed below if you have questions about your rights as a participant, or to discuss any concerns about, or problems with the research.

Ro Windwalker, CIP
Institutional Review Board Coordinator
Research Compliance
University of Arkansas
109 MLKG
Fayetteville, AR 72701-1201
479-575-2208
irb@uark.edu

I have read the above statement and have been able to ask questions and express concerns, which have been satisfactorily responded to by the investigator. I understand the purpose of the study as well as the potential benefits and risks that are involved. I understand that participation is voluntary. I understand that significant new findings developed during this research will be shared with the participant. I understand that no rights have been waived by signing the consent form. I have been given a copy of the consent form.

Signature of Participant	Date	Signature of Witness	Date

Appendix C

SUICIDE RISK ASSESSMENT AND ELIGIBILITY SCREENER

"Many times when people feel this way or have problems like these, they also think about death or have thoughts about suicide."

A. SUICIDAL IDEATION

In the past month…

A1. **Wish to be Dead** NO YES

Have you wished you were dead or wished you could go to sleep and not wake up?
If yes, describe:

If YES to A1, continue on to A2.
If NO, patient is not eligible for study participation.

A2. **Non-Specific Active Suicidal Thoughts** NO YES
General non-specific thoughts of wanting to end one's life/commit suicide (e.g., *"I've thought about killing myself"*) without thoughts of ways to kill oneself/associated methods, intent, or plan during the assessment period.

Have you actually had any thoughts of killing yourself?
If yes, describe:

If YES to A2, continue with Columbia suicide risk assessment below (sections A, B, C, D).
If NO, patient is not eligible for study participation.

A3. **Active Suicidal Ideation with Any Methods (Not Plan) without Intent to Act** NO YES
Subject endorses thoughts of suicide and has thought of at least one method. This is different than a specific plan with time, place or method details worked out (e.g. thought of method to kill self but not a specific plan). Includes person who would say, *"I thought about taking an overdose but I never made a specific plan as to when, where or how I would actually do it…and I would never go through with it."*

Have you been thinking about how you might kill yourself?
If yes, describe:

A4. **Active Suicidal Ideation with Some Intent to Act, without Specific Plan** NO YES

Active suicidal thoughts of killing oneself and subject reports having some intent to act on such thoughts, as opposed to *"I have the thoughts but I definitely will not do anything about them."*

Have you had some intention of acting on these thoughts?
If yes, describe:

What is the likelihood you will act on these thoughts in the next few weeks, from 0% to 100%?

Record percentage here: _____

INTENSITY OF IDEATION

The following features should be rated with respect to the most severe type of ideation (i.e., 1-5 from above, with 1 being the least severe and 5 being the most severe). Ask about time he/she was feeling the most suicidal.

In the past month, what was your most severe level of ideation?

_____ _____

Type # (1-5) ***Description of Ideation***

B1. **Frequency**

How many times have you had these thoughts?

(1) Less than once a week (2) Once a week (3) 2-5 times in week (4) Daily or almost daily (5) Many times each day _____

B2. **Duration**

When you have the thoughts how long do they last?

(1) Fleeting - few seconds or minutes
(2) Less than 1 hour/some of the time
(3) 1-4 hours/a lot of time
(4) 4-8 hours / most of day _____
(5) More than 8 hours / persistent or continuous

B3. **Controllability**

Could/can you stop thinking about killing yourself or wanting to die if you want to?

(1) Easily able to control thoughts
(2) Can control thoughts with little difficulty
(3) Can control thoughts with some difficulty
(4) Can control thoughts with a lot of difficulty
(5) Unable to control thoughts
(0) Does not attempt to control thoughts _____

B4. **Deterrents**

What are some of the things that stop you from wanting to die or acting on thoughts of killing yourself? To what extent have these things stopped you from wanting to die or acting on thoughts of committing suicide?

(1) Deterrents definitely stopped you from attempting suicide
(2) Deterrents probably stopped you
(3) Uncertain that deterrents stopped you
(4) Deterrents most likely did not stop you
(5) Deterrents definitely did not stop you
(0) Does not apply

_____

B5. **Reasons for Ideation**

What sort of reasons did you have for thinking about wanting to die or killing yourself? Was it to end the pain or stop the way you were feeling (in other words you couldn't go on living with this pain or how you were feeling) or was it to get attention, revenge or a reaction from others? Or both?

(1) Completely to get attention, revenge or a reaction from others
(2) Mostly to get attention, revenge or a reaction from others
(3) Equally to get attention, revenge or a reaction from others
(4) Mostly to end or stop the pain (you couldn't go on living with the pain or how you were feeling)
(5) Completely to end or stop the pain (you couldn't go on and to end/stop the pain living with the pain or how you were feeling)
(0) Does not apply

_____

C1.	In your lifetime, have you ever attempted suicide?	NO	YES
C2.	Has a close family member ever attempted suicide?	NO	YES
C3.	During the past month:		
	a. Did you feel like a burden on your loved ones?	NO	YES
	b. Did you feel socially isolated or lonely?	NO	YES
	c. Did you hate yourself?	NO	YES
	d. Did you feel you were unable to cope with your negative feelings?	NO	YES

D1. ***What do you typically do to cope when you feel suicidal?***

Describe:

D2. ***How much hope do you have that things will get better?***

1 = No hope
2 = Not much hope
3 = A little hope
4 = Some hope
5 = Lots of hope

_____

D3.	***How confident are you that you can handle the way things are right now?*** 1 = Not at all confident 2 = Not very confident 3 = A little confident 4 = Somewhat confident 5 = Very confident	_____

Low/Mild Risk (not eligible for study):
YES to A1 and NO to everything else.

Moderate Risk (eligible for study):
YES to A2 or A3 or A4 with intent < 50%

High Risk (not eligible for study, should be referred to specialty mental health):
YES to A4 with intent 50% or greater

Appendix D

Suicide Risk Assessment Tool

Start of Block: Eligibility Screening

Q74 BHC

_____

---

*

ID Patient ID

_____

Language What is the patient's primary language?

- English (1)
- Spanish (2)

Q1 Many times, when people feel this way or have problems like these, they also think about death or have thoughts about suicide.

Q2 In the past month, have you wished you were dead or wished you could go to sleep and not wake up?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If In the past month, have you wished you were dead or wished you could go to sleep and not wake up? = Yes

Q3 Please describe:

_____

_____

_____

_____

_____

Page Break

Q4 In the past month, have you actually had any thoughts of killing yourself?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If In the past month, have you actually had any thoughts of killing yourself? = Yes

Q5 Please describe:

_____

_____

_____

_____

_____

Page Break

End of Block: Eligibility Screening

Start of Block: Columbia Risk Assessment

Q6 Have you been thinking about ***how*** you might kill yourself?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Have you been thinking about how you might kill yourself? = Yes

Q7 Please describe:

_____

_____

_____

_____

_____

Page Break

Q8 Have you had some intention of acting on these thoughts?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Have you had some intention of acting on these thoughts? = Yes

Q9 Please describe:

_____

_____

_____

_____

_____

Q10 What is the likelihood that you will act on these thoughts in the next few weeks, from 0% to 100%?

Not likely Very likely

0 10 20 30 40 50 60 70 80 90 100

0

Page Break

Q14 Describe your most severe level of ideation in the past month:

_____

_____

_____

_____

_____

Q13 **CLINICIAN JUDGEMENT:** In the past month, what was the patient's most severe level of ideation?

- ○ Wish to be dead (1)
- ○ Non-Specific Active Suicidal Thoughts (2)
- ○ Active Suicidal Ideation with Any Methods (Not Plan) without Intent to Act (3)
- ○ Active Suicidal Ideation with Some Intent to Act, without Specific Plan (4)
- ○ Active Suicidal Ideation with Specific Plan, without Intent (5)
- ○ Active Suicidal Ideation with Specific Plan and Intent (6)

Page Break

Q15 How many times have you had these thoughts?

- ○ Less than once a week (1)
- ○ Once a week (2)
- ○ 2-5 times per week (3)
- ○ Daily or almost daily (4)
- ○ Many times each day (5)

Q16 When you have the thoughts how long do they last?

- ○ Fleeting - few seconds or minutes (1)
- ○ Some of the time - less than 1 hour (2)
- ○ A lot of time - 1 to 4 hours (3)
- ○ Most of the day - 4 to 8 hours (4)
- ○ Persistent or continuous - more than 8 hours (5)

Q17 Can you stop thinking about killing yourself or wanting to die if you want to? How easy is it to control these thoughts?

- ○ Yes, I can easily control these thoughts (1)
- ○ Yes, I can control these thoughts with little difficulty (2)
- ○ Yes, I can control these thoughts with some difficulty (3)
- ○ Yes, I can control these thoughts with a lot of difficulty (4)
- ○ No, I am unable to control these thoughts (5)
- ○ I do not attempt to control these thoughts (6)

Q19 What sort of reasons do you have for thinking about wanting to die or killing yourself?

_____

_____

_____

_____

_____

Q61 You mentioned [insert whatever patient mentioned here]. I am going to read some other reasons people sometimes think about suicide. As I read each one, tell me if it was true for you.

- ☐ To stop bad feelings (1)
- ☐ To stop physical pain (2)
- ☐ To get attention (3)
- ☐ Because I feel like I have nobody (4)
- ☐ Because I feel like a burden on my loved ones (5)
- ☐ Because I hate myself (6)
- ☐ Because I have no hope that the future will get better (7)

Q73 What are some of the things that stop you from wanting to die or acting on thoughts of killing yourself?

_____

_____

_____

_____

_____

Q18 To what extent have these things stopped you from wanting to die or acting on thoughts of committing suicide?

- ○ These things definitely stopped me from attempting suicide (1)
- ○ These things probably stopped me (2)
- ○ I am uncertain whether these things stopped me (3)
- ○ These things most likely did not stop me (4)
- ○ These things definitely did not stop me (5)
- ○ Does not apply (6)

Page Break

Q20 In your lifetime, have you ever attempted suicide?

- ○ Yes (1)
- ○ No (2)

Q46 **BHC:** Use this space to take notes on previous suicide attempt, if necessary

_____

_____

_____

_____

_____

Q21 Has a close family member ever attempted suicide?

- ○ Yes (1)
- ○ No (2)

Q47 **BHC:** Use this space to take notes on family member suicide attempt, if necessary

_____

_____

_____

_____

_____

Page Break

Q23 During the past month, did you feel like a burden on your loved ones?

- ○ Yes (1)
- ○ No (2)

Q49 **BHC:** Use this space to take notes on perceived burdensomeness, if necessary

_____

_____

_____

_____

_____

Q24 During the past month, did you feel socially isolated or lonely?

- ○ Yes (1)
- ○ No (2)

Q50 **BHC:** Use this space to take notes on loneliness or social isolation, if necessary

_____

_____

Page Break

Q25 During the past month, did you hate yourself?

- ○ Yes (1)
- ○ No (2)

Q51 **BHC:** Use this space to take notes on self-hatred, if necessary

_____

_____

_____

_____

_____

Q28 During the past month, did you feel unable to cope with your negative feelings?

- ○ Yes (1)
- ○ No (2)

Q54 **BHC:** Use this space to take notes on coping hopelessness, if necessary

_____

_____

_____

_____

Page Break

Q29 What do you typically do to cope when you feel suicidal?

_____

_____

_____

_____

_____

Q30 How much hope do you have that things will get better?

- No hope (1)
- Not much hope (2)
- A little hope (3)
- Some hope (4)
- Lots of hope (5)

Q31 How confident are you that you can handle the way things are right now?

- Not at all confident (1)
- Not very confident (2)
- A little confident (3)
- Somewhat confident (4)
- Very confident (5)

End of Block: Columbia Risk Assessment

Start of Block: Informed Consent

Q32 **NOTE TO BHC: Inform the patient about the study at this point. You can use the following script:**

"Based on your answers to my questions, you are eligible to participate in a brief study that involves answering just a few more questions now, then receiving treatment like normal and answering a few questions after our visit. You will be paid $10 for participation in today's part of the study. Then, four months from today somebody will call you and ask you similar questions over the phone. You will also be paid $10 if you answer questions at that point. It will take you about 10 minutes to fill out today's measures, and 10 minutes to fill out the measures 4 months from now. Do you have any questions for me at this point? Would you like to participate in this study?"

Has the participant consented to this study?

- ○ Yes (1)
- ○ No (2)

Q75 **NOTE TO BHC: Read the following script to the patient to get permission to access their EMR.**

"Great! And just one more thing… do you give permission for researchers from this study to access your electronic medical record to collect some additional data that could be important to this study? Specifically, we would like to gather information about the number of behavioral health visits you have attended, and the focus of behavioral health visits you may attend between now and the follow-up portion of the study. We will not be accessing any other part of your electronic medical record, and all of your information will

be kept confidential, to the extent allowable by law and University policy. Is this okay with you?"

- ○ Yes (1)
- ○ No (3)

End of Block: Informed Consent

Start of Block: Suicide Cognitions Scale

Q33
The following statements are intended to assess your beliefs about your current problems. Please read each statement carefully and select the number that best describes how you feel right now.

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
No one can help solve my problems (1)	○	○	○	○	○
I am completely unworthy of love (2)	○	○	○	○	○
Nothing can help solve my problems (3)	○	○	○	○	○
It is impossible to describe how badly I feel (4)	○	○	○	○	○
I can't cope with my problems any longer (5)	○	○	○	○	○
I can't imagine anyone being able to withstand this kind of pain (6)	○	○	○	○	○
There is nothing redeeming about me (7)	○	○	○	○	○
I don't deserve to live another moment (8)	○	○	○	○	○
No one is as loathsome as me (9)	○	○	○	○	○

End of Block: Suicide Cognitions Scale

Start of Block: Crisis Response Planning

Q55 **Note to BHC: Next, conduct a safety planning intervention with the patient. Use your clinical judgement for how to introduce the safety plan (e.g., if the patient has mentioned active ideation with a vague notion of how they would kill themselves but says there is zero percent likelihood that they will, you can frame this as a safety plan still being useful because it can serve as a go-to that will keep them safe in case things ever change, as we know that situations and level of risk can change suddenly).**

Use a physical printout of a safety planning form so you can work collaboratively with the patient. Then, at the end of the visit, make a copy of the safety planning sheet and make sure the patient's ID is written on the form so I can match their responses with their qualtrics survey later.

End of Block: Crisis Response Planning

Appendix E

Suicide Cognitions Scale – Short Form (Bryan et al., 2017b)

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. No one can help solve my problems.	1	2	3	4	5
2. I am completely unworthy of love.	1	2	3	4	5
3. Nothing can help solve my problems.	1	2	3	4	5
4. It is impossible to describe how badly I feel.	1	2	3	4	5
5. I can't cope with my problems any longer.	1	2	3	4	5
6. I can't imagine anyone being able to withstand this kind of pain.	1	2	3	4	5
7. There is nothing redeeming about me.	1	2	3	4	5
8. I don't deserve to live another moment.	1	2	3	4	5
9. No one is as loathsome as me.	1	2	3	4	5

Appendix F

Crisis Response Planning Worksheet

Step 1: Warning Signs (thoughts, images, mood, situation, behavior) that a crisis may be developing:
1. 2. 3. 4. 5. 6.
Step 2: Internal Coping Strategies – things I can do to take my mind off my problems without contacting another person (e.g., relaxation technique, physical activity):
1. 2. 3. 4. 5. 6. On a scale of 0-100, how confident are you that these coping strategies will work? _____
Step 3: People and Social Settings that Provide Distraction:
1. Name _____ Phone _____ 2. Name _____ Phone _____ 3. Name _____ Phone _____ 4. Name _____ Phone _____ 5. Name _____ Phone _____ 6. Place _____ 7. Place _____ 8. Place _____ 9. Place _____ 10. Place _____ On a scale of 0-100, how confident are you these distractions will work? _____

Step 4: People Whom I Can Ask for Help:
1. Name _____ Phone _____ 2. Name _____ Phone _____ 3. Name _____ Phone _____ 4. Name _____ Phone _____ 5. Name _____ Phone _____ 6. Name _____ Phone _____ On a scale of 0-100, how confident are you that talking to these people will help? _____
Step 5: Professionals or Agencies I Can Contact During a Crisis:
1. Clinician Name _____ Phone _____ 2. Clinician Name _____ Phone _____ 3. Local Urgent Care Services _____ Phone _____ Address _____ 4. Suicide Prevention Lifeline Phone: 1-800-273-TALK (8255)
Step 6: Making the Environment Safe:
1. 2. 3. 4. 5. 6. On a scale of 0-100, how confident are you that you can make your environment safe? _____
Step 7: Reasons for Living:
1. 2. 3. 4. 5. 6. On a scale of 0-100, how confident are you that these things will stop you from killing yourself?

Appendix G

Modified A Collaborative Outcomes Resource Network (ACORN) Questionnaire

This brief questionnaire asks about some of the most commonly reported thoughts, feelings and behaviors among adults seeking behavioral health treatment. Please think about the PAST TWO WEEKS and indicate how often each of the following occurred. This will help you and your therapist to plan your treatment and monitor your improvement.

In the past two weeks (14 days), how often did you:	**Never** (0 days)	**Hardly ever** (1 or 2 days)	**Some-times** (3-5 days)	**Often** (6-10 days)	**Very often** (11-14 days)
…feel unhappy or sad?	□	□	□	□	□
…have little or no energy?	□	□	□	□	□
…have a hard time getting along with family, friends or coworkers?	□	□	□	□	□
…feel worthless?	□	□	□	□	□
…feel no interest in things?	□	□	□	□	□
…feel tense or nervous?	□	□	□	□	□
…cry easily?	□	□	□	□	□
...have someone express concerns about your alcohol or drug use?	□	□	□	□	□
…feel lonely?	□	□	□	□	□
…have problems with sleep (too much or too little)?	□	□	□	□	□
…feel irritated?	□	□	□	□	□
…feel hopeless about the future?	□	□	□	□	□
…feel you were not able to complete your work or other important tasks in a timely manner?	□	□	□	□	□
…find yourself daydreaming, worrying, or staring into space?	□	□	□	□	□
… feel pain was making it hard for you to complete your work or other tasks?	□	□	□	□	□
…. feel your physical health was bad?	□	□	□	□	□
… feel your mental health was bad?	□	□	□	□	□
… feel you ought to cut down on your drinking or drug use?					
… feel you had friends or family that could provide you with help, such as with money, food, or transportation?	□	□	□	□	□

In the past two weeks (14 days), how often did you:	**Never** (0 days)	**Hardly ever** (1 or 2 days)	**Some-times** (3-5 days)	**Often** (6-10 days)	**Very often** (11-14 days)
… feel you had friends or family that could provide you with emotional support?	□	□	□	□	□
… think your health and well-being were under your control?	□	□	□	□	□
… think there is no use in trying to change the future, because it is not in your control?	□	□	□	□	□
… feel you were a burden to others?	□	□	□	□	□
... have thoughts that you would be better off dead?	□	□	□	□	□
… thought about hurting yourself in some way?	□	□	□	□	□
… did something to physically hurt myself?	□	□	□	□	□

Please take a moment to give feedback on your behavioral health session.	Do not agree	Somewhat disagree	Not sure	Somewhat agree	Agree
I am satisfied with my appointment.	□	□	□	□	□
I found it easy to talk about my problems with the therapist.	□	□	□	□	□
The therapist gave me useful information and tips for how to manage my problems.	□	□	□	□	□
I intend to come back for another appointment.	□	□	□	□	□
I would prefer to address this problem on my own, without the help of the therapist.	□	□	□	□	□

	No hope	Not much hope	A little hope	Some hope	Lots of hope
How much hope do you have that things will get better?	□	□	□	□	□
	Not at all confident	**Not very confident**	**A little confident**	**Somewhat confident**	**Very confident**
How confident are you that you can handle the way things are right now?	□	□	□	□	□

What is the percent likelihood you will attempt suicide in the next few weeks? _____

Appendix H

Interview regarding BHC perceptions of crisis response planning intervention in PCBH

Opening Question:

1. Tell me a little bit about your experience of offering this intervention in PCBH.

Questions about patient impact:

2. What parts of the intervention did your patients seem to respond well to?

3. What parts of the intervention did patents seem to respond less well to?

4. From your perspective, what seemed to be the most important or useful parts of the safety plan to your patients (e.g., psychoeducation, identifying coping strategies, identifying people to talk to, means restriction, discussing reasons for living)?

5. What was your impression of how the therapeutic relationship came into play during this intervention?

Questions about delivering safety planning in PCBH:

6. I know that working in primary care, you often have a very busy schedule. Can you tell me a little bit about how this intervention fit within the flow of primary care?

7. How do you think the PCPs in your clinic viewed your management of suicidal patients with this intervention?

Questions about BHC impact:

8. How did the experience of providing this intervention in PCBH impact your clinical training?

9. What were your impressions of the Qualtrics suicide risk assessment interview?

Additional feedback:

10. Do you have any additional feedback you'd like to share?

Appendix I

Practice Components Checklist

Content	**Check this box if used**	**Visit number used**
First visit: Risk Assessment and Crisis Response Plan		
Suicide screening question		
Risk assessment (C-SSRS)		
Completion of pre-treatment measures (SCS-S)		
Creation of Crisis Response Plan		
Completion of post-visit measures (ACORN, SCS-S)		
Schedule follow-up visit		
Subsequent visits		
Check in; assess for changes in risk status		
Check on use of crisis response plan, modify and problem solve if needed		
Psychoeducation		
Activity scheduling / behavioral activation		
Cognitive restructuring		
Sleep hygiene		
Teach deep breathing		
Teach progressive muscle relaxation		
Teach distress tolerance / grounding exercises		
Supportive listening		
PCP (or psychiatrist) prescribed antidepressant medication		
Mindfulness exercises		
Acceptance and Commitment Therapy		
Other: _____		
Other: _____		

Patient ID Number _____ Number of BH visits between initial visit and f/u ____