



Published in final edited form as:

Cogn Behav Pract. 2012 May ; 19(2): 209–217. doi:10.1016/j.cbpra.2010.11.005.

Health Behavior Theories and Research: Implications for Suicidal Individuals' Treatment Linkage and Adherence

Polly Gipson and Cheryl King

University of Michigan

Abstract

Treatment linkage and adherence to psychotherapeutic interventions can be challenging with suicidal individuals. Health behavior theories, specifically the Health Belief Model, Stages of Change, and Theory of Planned Behavior, focus on individuals' beliefs, their readiness to change, their perceptions of illness severity and "threat," their perceptions of significant others' attitudes toward illness and treatment, and their behavioral intentions to change. These constructs have relevance both for understanding suicidal individuals' behaviors related to treatment utilization and for understanding cultural variations in these behaviors. Furthermore, these theories have implications for clinical practices aimed at facilitating improved treatment follow-through and adherence. After describing the theories and their constructs, clinical examples are provided to illustrate applications to practice with suicidal individuals.

BEGINNING in the mid-20th century, health behavior theories originated to better understand and facilitate individual behaviors related to physical health outcomes, such as participation in tuberculosis screening (Glanz, Rimer, & Lewis, 2002). These theories continue to have relevance today, with more recent applications extended to behavior changes related to alcohol use (Minugh, Rice, & Young, 1998), sexual health including HIV prevention and condom use (Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Fishbein, 2000), healthy eating (Shaikh, Yaroch, Nebeling, Yeh, & Resnicow, 2008), linkage to recommended treatments (Lewis et al., 2009), and treatment adherence (Rusch & Corrigan, 2002). Health behavior theories also have the potential to enhance our understanding of individual behaviors related to treatment seeking and adherence among suicidal individuals.

This article will consider three specific health behavior theories, the Health Belief Model (HBM; Becker, 1974; Rosenstock, 1966), Stages of Change (SOC; Prochaska & DiClemente, 1983), and the Theory of Planned Behavior (TPB; Ajzen & Driver, 1991), in terms of their implications for the "health behaviors" of suicidal individuals. HBM, SOC, and TPB are widely used health behavior theories (Glanz, Rimer, & Viswanath, 2008) that have different, albeit overlapping, foci. More specifically, each apply a cognitive framework to our understanding of individual choices and behaviors and all are explanatory models that put forth related constructs with differing degrees of emphasis on an individual's beliefs, attitudes, intentions, or motivations. Table 1 provides a summary of each theory's key concepts. Although health promotion more broadly involves an ecological approach that emphasizes the interacting influences across all levels of analysis, from social and economic policy levels to pathophysiological pathways (National Cancer Institute Monographs, 2005), much of the empirical research has focused on explaining and changing behaviors at the individual level (Painter, Borba, Hynes, Mays, & Glanz, 2008), which is the focus of this

article. These theories have implications for our understanding of the individuals' treatment linkage and adherence behaviors.

Each health behavior theory will be discussed in terms of its potential relevance to our understanding of suicidal individuals' participation in treatment with a particular focus on psychotherapy. Following each theory description will be a discussion about the clinical implications, including their implications for culturally specific populations. As context, we first address the challenges of treatment linkage and treatment adherence among suicidal individuals and the importance of cultural considerations. As will become evident, these health behavior models can help providers understand factors that may facilitate treatment linkage and adherence. They are also useful in understanding cultural and racial/ethnic differences in suicidal individuals' views about symptoms, mental disorders, and treatment, which have implications for treatment linkage and adherence.

Challenges of Treatment Linkage and Adherence

Patients' follow-through with treatment recommendations, or treatment linkage, is sometimes poor following a psychiatric hospitalization for acute suicide risk or an outpatient evaluation suggesting severe depression with emerging thoughts of suicide. Despite substantial evidence for the effectiveness of cognitive-behavioral treatment (CBT) for depression with adolescents (Klein, Jacobs, & Reinecke, 2007) and adults (DeRubeis et al., 2005), and, more specifically for the effectiveness of cognitive therapy (Brown et al., 2005) and dialectical behavior therapy (Linehan et al., 2006) with adults who have engaged in suicidal behavior, some individuals do not link to recommended psychotherapy treatments and others do not complete a full course of psychotherapy.

Spirito and colleagues (1992) examined patterns of outpatient treatment among suicidal adolescents who had been psychiatrically hospitalized. Despite recommendations to the contrary, 9% of these adolescents did not participate in any outpatient treatment. Further, only 59% of these adolescents were participating in ongoing psychotherapy at 3-month follow-up. In another study of suicidal adolescents' adherence with treatment recommendations following psychiatric hospitalization, King et al. (1997) reported variation by type of treatment. Self-reported adherence rates were 66.7% for medication follow-up, 50.8% for individual therapy, and 33.3% for parent guidance or family therapy. These findings are consistent with those of Trautman, Stewart, and Morishima (1993), who reported that 77% of suicidal adolescents discontinued outpatient treatment prematurely with a median number of outpatient treatment sessions prior to discontinuation of only three visits.

Treatment linkage and retention in psychotherapy can also be challenging with adults. Sokero et al. (2008) examined differences between suicidal and nonsuicidal adult patients with major depressive disorder in treatments obtained, attitudes toward treatment, and treatment adherence. Of particular relevance to this article, self-reported levels of adherence to antidepressant treatment and psychotherapy were not found to differ between suicidal and nonsuicidal groups. Approximately two-thirds of the patients reported "good adherence" to both types of treatment, meaning that one-third of these individuals either participated in treatment irregularly or not at all.

Clinical treatment trials provide us with additional information about therapy retention rates for adolescent and adult populations. For example, in the Treatment of Adolescent Suicide Attempters Study (TASA), adolescent suicide attempters with unipolar depression were enrolled in one of three conditions (specialized CBT, medication algorithm, combination treatment). Of the 17 adolescents in CBT alone, 2 withdrew before the treatment began and 4 more withdrew during the first 12 weeks of treatment (Brent et al., 2009). In the

randomized controlled trial of cognitive therapy for adults who recently attempted suicide (Brown et al., 2005), 35% of the adults who met study inclusion and exclusion criteria declined to participate, with 21 of them reporting this was because they “did not wish to receive treatment.” Although the characteristics of research trials limit their generalizability to customary care in the community, they also point to the challenge of treatment linkage and therapy retention.

Cultural Considerations

Cultural norms that might affect ethnic minority individuals' decisions to seek and follow through with treatment are also important to our understanding of suicidal individuals' behaviors in this area. Across the lifespan, ethnic minority populations underutilize mental health services (Wang et al., 2005), and health-seeking disparities persist among ethnic minorities who are experiencing a crisis such as suicidal behavior (Freedenthal, 2007). The Surgeon General's landmark Report on Mental Health, specifically the Supplement on Culture, Race, and Ethnicity in Mental Health (U.S. DHHS, 2001), indicated that “culture counts,” as mental health disparities persisted across ethnic/racial groups even when other sociodemographic factors were controlled. Ethnic minorities were found to either not receive mental health services or to receive services that were of lower quality than those provided to Caucasians. Consistently, studies have found that ethnic minorities are less likely to seek help due to a number of factors, which are often conceptualized as barriers. These barriers might exist internally, such as stigma, and/or externally, such as lack of insurance benefits, transportation difficulties, or inflexible clinic hours (U.S. DHHS, 2001).

Barriers to health seeking may exist on multiple levels. For example, at the individual level, which is the focus of this article, the perception that mental health problems are not significant may be a barrier. At the patient-provider level, cultural mistrust and providers' lack of culturally specific knowledge may contribute to ethnic minorities' underutilization of mental health services (Breland-Noble, 2004). Although there is cultural variation, factors such as religiosity/spirituality, social support, ethnic identity, and acculturation status (Duarté-Vélez & Bernal, 2007; Leong, Leach, Yeh, & Chou, 2007; Molock, Matlin, Barksdale, Puri, & Lyles, 2008; Walker, Utsey, Bolden, & Williams, 2005) have all been found to serve as protective/risk factors for suicide risk within African American, Asian, Latino, and Native American populations. This speaks to the importance of cultural understanding among providers.

Health Belief Model (HBM)

The HBM is a value-expectancy theory that considers the value one assigns to maintaining wellness or seeking treatment in the face of an illness, and one's beliefs about the effect of taking action (Janz, Champion, & Strecher, 2002). The notion of value-expectancy stems from cognitive theorists such as Kurt Lewin (Lewin, Dembo, Festinger, Sears, & Hunt, 1944), who posited that behavior can be understood when the value an individual places on a particular outcome is known as well as the likelihood (i.e., expectation) that the action would result in the desired outcome.

Over time the HBM has expanded, and in its current form is best articulated as six constructs or components that predict an individual's readiness to enact change: perceived susceptibility; perceived severity; perceived benefits; perceived barriers; cues to action; and self-efficacy. First, an individual must believe he or she is at risk for the health problem or associated negative outcome (perceived susceptibility). Second, the level of perceived severity must be high for an individual to seek treatment or take the recommended action. In tandem, the individual's levels of perceived susceptibility and severity are conceptualized as the overall perceived threat (Janz et al., 2002). At this stage an individual is likely presented

with various options or recommendations for prevention or intervention. For an individual to adhere to the recommendations, he or she must believe doing so will be beneficial. As part of the decision-making process, he or she also considers possible barriers, weighing the pros and cons in a cost-benefit analysis. Another essential element in the HBM is an individual's "readiness to change" (cues to action). Taking everything into account, the individual reaches a decision about whether to engage in a behavior, such as treatment linkage or adherence. An individual also makes an appraisal about how capable (self-efficacy) he/she is to carry out the recommendations given the barriers.

As recently discussed by Henshaw and Freedman-Doan (2009), application of the HBM to individual mental health utilization behaviors has been sparse. Most of the research is focused on medication adherence in adult patients with schizophrenia (e.g., Fenton, Blyler, & Heinssen, 1997; Sapiro, Vahia, Reyes, Ramirez, & Cohen, 2008). For example, Adams and Scott (2000) examined medication adherence in a sample of severely mentally ill outpatients with an affective disorder or schizophrenia diagnosis. Adherence was measured via self-report (continuous measure) and by a blind evaluator (highly adherent, partially adherent). Compared to the patients in the partially adherent group, those in the highly adherent group reported significantly higher perceived illness severity. Additionally, the perceived levels of severity and benefit accounted for 43% of the variance in adherence.

Clinical Implications of HBM for Suicidal Individuals

During the assessment phase, the HBM could be applied by clinicians to determine a suicidal individual's perceived risk level. That is, how susceptible does the individual with a depressive or other type of mental disorder believe he/she is for suicidal behavior or other negative outcomes such as impaired work performance. Assuming a patient's initial impression about perceived susceptibility for negative outcomes is low; clinicians should guide the patient in exploring perceived severity. Gathering information about the patient's psychiatric history and extended family psychiatric history might alter the patient's threat level (i.e., perceived susceptibility + perceived severity). Someone who assigns a high threat level to their situation is more likely to follow through on clinicians' recommendations if they believe the proposed treatment will decrease the likelihood of negative outcomes. The clinician could also explore the patient's perceptions of the benefits of treatment linkage and emphasize the availability of evidence-based treatment. In this manner, the clinician is facilitating the patient's cost benefit analysis about recommendations. For individuals who continue to report a low perceived threat, clinicians could explore what cues to action might increase their readiness to adhere to treatment. Further, clinicians might also benefit by being flexible in their approach, such as by offering to explore an individual's ambivalence for a specified number of sessions to help the patient decide whether he/she is willing to engage in psychotherapy.

Studies that have examined racial and ethnic group differences in individuals' perceptions of illness severity and the potential benefits of treatment can be easily conceptualized within an HBM framework (Henshaw & Freedman-Doan, 2009). For example, within the African American community, an active coping style referred to as "John Henryism," which suggests that individuals should overcome their problems through their own strength despite resources needed to do so, might impact this group's behavioral tendency to seek help and disclose suicide risk (Breland-Noble, 2004). Use of this coping strategy might also explain why perceived susceptibility to suicide risk is low within the African American population (Goldston et al., 2008), despite evidence that adolescents, in particular, are at high risk (Joe, Baser, Breeden, Neighbors, & Jackson, 2006).

Within the Asian population, there is a dearth of research about culturally specific factors that affect treatment engagement for suicidal individuals. Issues related to acculturation

(e.g., ethnic identity, discrimination) have been related to suicidal behavior (Leong et al., 2007) and are often accompanied by emotional states such as shame (Zane & Mak, 2003). In addition to the possibility that shame could be associated with negative beliefs about the appropriateness or effectiveness of treatment, the personal ratings that some Asians might subscribe to their symptom presentation could alter their perceived threat level, which in turn has implications for treatment adherence. Clinicians normalizing the difficulties of balancing maintaining cultural practices while attempting to integrate another culture's values might facilitate individuals disclosing negative emotions.

An individual's cost-benefit analysis directly impacts treatment engagement and may have particular relevance within ethnic minority populations due to the myriad of internal and external barriers. A number of culturally relevant strategies have been discussed within the literature. For example, to increase treatment follow-through in African American and Latino youth and their families, McKay and colleagues (2004; 1996) spent time exploring internal and external barriers and problem solving ways to overcome them. This was implemented via a telephone call prior to the first appointment and resulted in increased attendance at the initial in-person session. Further, this problem-solving approach continued at the first session to facilitate ongoing treatment adherence.

Grote and colleagues (2007) developed an engagement interview to improve treatment adherence in pregnant and depressed low-income African American and Caucasian women. The interview, based on principles of ethnographic and motivational interviewing (Miller & Rollnick, 2002; Schensul, Schensul, & Lecompte, 1999), allows the clinicians to understand the patient's cultural context, motivations for treatment, and readiness to change, consistent with the HBM cues to action. Results from a randomized pilot study in which women were either assigned to the engagement strategy plus treatment (brief interpersonal psychotherapy) or treatment alone revealed that 96% of women who received the engagement interview plus treatment attended the first treatment session compared to 36% of women who received the treatment only. Similarly, 68% completed the full course of psychotherapy compared to 7% of women assigned to the treatment only. Other effective strategies have included augmenting CBT with case management services, which was associated with increased treatment adherence in sample of depressed Latina women (Azocar, Miranda, & Dwyer, 1996), and offering psychoeducation sessions prior to treatment, which was found to improve treatment adherence (Miklowitz & Hooley, 1998; Miranda et al., 2003).

Case Example: Susan (HBM Incorporating Cultural Considerations)—Susan, a 35-year-old African American female and single parent, agreed to adhere to her clinician's recommendation of outpatient psychotherapy after two initial sessions in which HBM constructs were successfully implemented by her clinician. Specifically, Susan's threat level was raised after discussions of her long-standing history of depression and recent emergence of suicidal thoughts. Although Susan was convinced she would never act on these thoughts, citing her 10-year-old son as the primary deterrent, she appears alarmed by them and concerned about her admittedly poor job performance for which she was in jeopardy of losing. All of these factors were cues to action. Additionally, Susan's family history played a role in her decision to pursue treatment, as her maternal grandmother was hospitalized once because of suicidal thoughts, and her mother has struggled with depression as long as she could remember. Her cost-benefit analysis indicated that the benefits of seeking treatment seemed to outweigh the barriers discussed in the initial sessions. Despite the clinician's initial impression that Susan would adhere with treatment, following the third consecutive session in which a CBT approach was introduced, Susan's adherence began to decline. She missed two consecutive sessions and often arrived late to sessions. For Susan's fifth session, the clinician implemented a problem-solving approach focused on barriers to adherence, due

to concerns that Susan was headed toward premature termination of treatment. Susan acknowledged internal and external barriers to her sporadic attendance, and shared a belief that the intervention would not help decrease her negative symptoms (i.e., lack of perceived benefit). She described weekly appointments as another “to do” item on her already overscheduled life. Susan's clinician spent considerable time validating her feelings and exploring perceived benefits/barriers to treatment and ways to increase her readiness for change, which was similar to the clinician's initial approach that engaged Susan in treatment. The feasible options were modifying the treatment schedule from weekly to bi-weekly sessions; augmenting off weeks with brief telephone check-ins to prevent treatment disengagement; and implementing more frequent reassessment of the treatment plan. Susan was willing to treat her assignments as “mini-experiments” with the understanding that assignments and/or the treatment approach would be tweaked should her concern of deriving little to no benefit be realized. In sum, in addition to spending two to three sessions focused on bolstering Susan's treatment readiness, sessions addressing treatment adherence were also needed to increase Susan's self-efficacy about launching the treatment intervention. By Susan's clinician addressing treatment adherence difficulties head on, a more collaborative treatment plan was agreed upon, including more frequent assessment of the plan's feasibility/effectiveness.

Stages of Change

The SOC model was derived from the Transtheoretical Model, a conceptual framework initially developed to consider various interventions, primarily psychotherapies, in terms of stages or processes of individual behavior change (Prochaska & DiClemente, 1983). Unlike the HBM that is focused on the value individuals place on treatment readiness, the SOC emphasizes individuals' intention to engage in treatment within a particular timeframe, which is conceptualized into distinct stages. The first stage, *precontemplation*, represents an individual who has no intention of engaging in behavioral change (typically within the next 6 months), whereas an individual in the *contemplation* stage indicates a readiness to change (behavioral intention). Those individuals who take steps toward action and intend to continue their efforts over the next 30 days are within the *preparation* stage. In the *action* stage individuals have demonstrated a behavior change within a 6-month time frame. If this change has been sustained for more than a 6-month period, one is generally considered to be within the *maintenance* stage (Prochaska, Redding, & Evers, 2002). By determining an individual's current stage at a given point in time, specific strategies, which will be detailed under implications, can be implemented to assist individuals in progressing to subsequent stages. This progression, however, is not expected to be a linear process; rather, it is a fluid process with individuals moving back and forth between stages at various points in time.

A modified version of the SOC measure was used by the Treatment for Adolescents with Depression Study (TADS) team to examine the relation between adolescents' treatment readiness at baseline and treatment outcome (Lewis et al., 2009). Results indicated that adolescents' positive changes in *action* scores significantly predicted greater decreases in depressive symptoms, although they could not confirm the direction of the relationship. Similarly, adolescents who expected a more optimal treatment outcome had significantly higher *contemplation* and *action* scores (Lewis et al.).

Clinical Implications of SOC for Suicidal Individuals

The SOC could be applied when assessing a suicidal individual's readiness to engage in treatment, specifically an individual with a history significant for suicidal behavior. A patient's baseline readiness likely has implications for the treatment recommendations clinicians will offer. A good candidate for CBT is an individual who agrees to work collaboratively with the clinician, and one who is willing to complete CBT assignments

outside of session (Kazantzis, Deane, & Ronan, 2000). Additionally, a patient's SOC likely has implications for other treatment recommendations a clinician might offer (e.g., psychiatric medication consultation). Depending on a patient's SOC, clinicians could help the patient identify when he or she might be ready to pursue other treatment recommendations. For those individuals who have taken steps toward change, clinicians could explore what other step(s) the patient intends to take and in what specified time period.

Assessing individuals' SOC also has important cultural relevance. In an effort to engage depressed African American adolescents and their families in treatment, Breland-Noble, Bell, and Nicholas (2006) put forth an intervention that incorporated the SOC construct, among other constructs, into telephone and in-person sessions. Within the context of this framework, when individuals are not yet ready to engage in treatment, clinicians consider discussing the individual's readiness and exploring what factors might contribute to forward movement. In the absence of acute suicide risk, this approach could be useful in building a therapeutic alliance. It allows clinicians to step out of the "expert" role and demonstrate respect for the individual's assessment of their difficulties. Further, clinicians might consider validating ethnic minorities' potential cultural mistrust toward the mental health system, helping the individual place stated or nonstated concerns within a historical context (Breland-Noble, 2004). Clinicians should also be aware of other diversity considerations such as developmental period and the role autonomy plays when adolescents/young adults are making treatment decisions.

Case Example: John (SOC Incorporating Individuation Issues)—John is a 20-year-old Caucasian male who is home from college over the summer break. John's parents are concerned about him because he has failed three courses and is making negative self-statements. His parents scheduled an appointment for him with a mental health professional who had successfully treated a friend's son. John initially resisted the appointment, but agreed to "a" session to get his parents off his back. The clinician concluded her assessment with a number of concerns. First, based on the information John reported, he had experienced his first major depressive episode the previous winter. He was using increasing amounts of alcohol to get his mind off his problems, particularly related to school failure and a highly valued relationship with his high school girlfriend that was ending. In addition, John endorsed experiencing suicidal thoughts over the past month when he realized his academic failure was a certainty. More specifically, John reported thinking almost daily that if he were dead life would be better off for everyone else. He had also wished for harm to come his way (e.g., car accident), but denied having specific thoughts or a plan about how or when to kill himself.

In addition to the clinical interview, John completed the Stages of Change Questionnaire (SOCQ; McConaughy, Prochaska, & Velicer, 1983). Both corroborated that John's baseline stage was contemplation. He was aware of his problems and had given some thought to change, but was not ready to commit to either CBT or the possibility of medication treatment. The clinician provided psychoeducation about the symptoms of depression and informed John of the connection between mood problems, substance use, and suicidal thoughts. John indicated that if by the holiday break (i.e., in 6 months) life has not improved, he would be willing to seek treatment at his university counseling center. John agreed to the development of a safety plan and decided that with the therapist present, he could inform his parents of his suicidal thoughts and desire to not act on them. The session concluded with John agreeing to check-in with the therapist in a month, but also remaining insistent that this was not the time for psychotherapy.

Theory of Planned Behavior

The TPB, an extension of the Theory of Reasoned Action (Ajzen, 1991; Ajzen & Driver, 1991), proposes that an individual's behavioral intention is the central predictor to behavior change, similar to the SOC. The TPB underscores one's perceived behavioral control to account for situations in which an individual does not have complete control over a situation, which is in contrast to the SOC, which highlights follow-through within a particular time frame. The TPB also incorporates a value expectancy framework consistent with the HBM. Other key components include attitude toward behavioral change and the perception of others' attitudes about their possible decision (subjective norm). Stigmatizing attitudes often cause individuals great concern. Research supports that an individual's attitudes and perceived subjective norms about behavior change predict the likelihood of carrying out a specified behavior intention (Montano, Kasprzyk, von Haefen, & Fishbein, 2001).

Although the TPB has been more extensively applied to physical health outcomes, there is some evidence to support its relevance to treatment utilization. Compton and Esterberg (2005) conducted a pilot study to examine the extent to which TPB constructs contributed to African American family members' decisions to seek initial hospitalization for relatives due to psychotic episodes. As the family members' perceived behavioral control increased (defined as fewer perceived barriers to treatment linkage), their delay in seeking treatment decreased. Perceived behavioral control was also significantly associated with perceived stigma. As stigma increased, perceived behavioral control decreased and was associated with delayed treatment. The remaining two TPB constructs (attitude and subjective norm) were not correlated with family members' treatment-seeking behavior.

Rotheram-Borus and colleagues (1996) developed an intervention that they delivered to 140 Latina adolescents in the emergency department following their suicidal attempts. Although the research report was not presented within a TPB framework, it illustrates the potential explanatory usefulness of TPB constructs. Consistent with the TPB, one aim was to increase treatment linkage following discharge. Positive interactions between the staff and families were seen as one strategy to accomplish this goal. Second, adolescents and their families were shown a "soap opera" videotape that provided psychoeducation about suicide and the importance of seeking outpatient treatment and what to expect. This component also likely contributed to the attitude construct of TPB. Additionally, it may have helped to modify perceived negative subjective norms about suicidal behavior, as viewing a video of others discussing suicide could lessen family member's negative beliefs about others' perceptions of their child's attempt. Finally, a crisis interventionist served as a liaison for outpatient treatment linkage. Perceived behavioral control is another key element of the TPB, which involves one's perceived control and power of external factors that either facilitate or impede behavioral intention. Providing the family with a link between hospital- and community-based services likely strengthened the families' belief that continued treatment was possible. Results indicated that treatment adherence post-ED visit was significantly greater for teens who received the intervention rather than treatment as usual (i.e., 95.4% versus 82.7%). Further, teens in the intervention group attended more family CBT sessions and continued to demonstrate greater adherence in terms of session attendance and treatment completion at 18-month follow-up (Rotheram-Borus, Piacentini, Cantwell, Belin, & Song, 2000).

Clinical Implications of TPB for Suicidal Individuals

The TPB could also be useful to clinicians working with suicidal individuals. As indicated by the theory, it would be important for clinicians to assess patients' behavioral intention around safety and adherence to safety plans or crisis response plans, which can be conceptualized as one form of treatment adherence. Similarly, the clinician assesses how

willing the patient is to adhere to treatment recommendation (e.g., follow-up session in 2 days) and what factors the patient believes to be outside his or her control that could impact implementation of the plan.

Using the TPB framework, clinicians could explore individuals' attitudes toward treatment for themselves in addition to subjective norms. These could include cultural factors that might impede or facilitate treatment seeking. There is evidence to suggest that patients' perceptions about the etiology of their depression/suicidal ideation at the individual, family, community levels impact treatment decisions. Assessment of these perceptions is also important when family members' attitudes can affect treatment outcome, such as with children and their parents. For example, in a diverse sample of over 1,000 African American, Latino, and Asian/Pacific Islander American families whose children had psychological problems, Yeh and colleagues (2004) found that ethnic minority parents were less likely to attribute their children's difficulties to biopsychosocial causes. This could impact parents' behavioral intentions to seek biologically or behaviorally driven treatments. Clinicians might benefit from assessing patients' beliefs as these may be correlated with treatment adherence. That is, individuals might be less inclined to complete a full course of CBT if they have not "bought into" the underlying rationale of this approach.

Exploration of cultural factors are important because individuals' beliefs about the origin of their difficulties likely influence who is deemed as an appropriate source of help. For instance, research indicates that African American and Native American populations are more likely to seek help from religious and spiritual healers than mental health professionals (Beals et al., 2005; Neighbors, Musick, & Williams, 1998). Latino populations are more likely to seek help from family supports (Cabassa, Lester, & Zayas, 2007).

Along with race/ethnicity-related factors, aging has also been found to influence attitudes toward mental health seeking. Using a clinical and community sample of older adults, Quinn, Laidlaw, and Murray (2009) assessed attitudes toward mental health seeking. Results of their mixed qualitative and quantitative methods approach revealed that stigmatizing attitudes toward mental health problems were related to negative attitudes about aging. However, the clinical subsample that had previous experience with the mental health system held more positive attitudes than their counterparts with no history of experience.

Case Example: Mary (TPB Addressing Diversity Factors of Ethnicity and Age)

—Mary is a 60-year-old married Latina female who was forced into early retirement by the company she served for 30 years. Financially her husband earns enough to support their household, but Mary's sense of worth has plummeted. At the suggestion of her younger sister, whom Mary respects, she agrees to meet with a therapist.

Unbeknown to her sister, Mary also agrees because she cannot shake off thoughts about killing herself, specifically overdosing on the prescription drugs she takes for physical-related ailments. Because Mary's behavioral intention to remain safe is high, she readily reveals her plan to the therapist. The therapist explores Mary's attitudes toward suicidal behavior and where they might have come from. Mary indicates that she is not aware of anyone in her social network who has been suicidal, indicating that such thoughts are unacceptable, violating religious beliefs. She also has never experienced these thoughts before, and reported guilt/shame about her thoughts. Mary also endorses stigmatizing attitudes toward treatment (subjective norm) held by her and her loved ones. Specifically, Mary states the belief that problems can only be solved through their faith and the help of family. Mary also reports that she has never sought "professional help," before and mainly agreed to today's appointment to quell her sister's worry. Next, the therapist explores Mary's motivation to follow through with her behavioral intention to remain safe. Mary is able to

name several social supports (e.g., husband, grandchildren, and friends) as motivators. During the exploration Mary also realizes she is motivated to get better so that she can help other seniors who might feel worthless because their work careers are over. The therapist and Mary continue to complete her safety plan with activities she could engage in, such as walking with neighborhood friends. With the therapist's help, Mary is able to generate effective coping statements. Should all of the identified steps in Mary's safety plan fail to decrease her suicidal ideation, she agrees to contact her husband first, followed by the sister who recommended today's session. Mary was open to the therapist being listed as a third option, but indicated a low readiness to commit to 10 weeks of CBT. She agrees to call 911 if no one else on her plan is reachable. Lastly, Mary agrees to safety-proof her home by placing her husband in charge of all medications. The plan is for her husband to leave her daily dosage in a pill box each morning. There are no other lethal means in Mary's home (e.g., a firearm). Mary expresses confidence and genuine excitement about her safety plan. Because Mary is not ready to engage in psychotherapy, the therapist inquired whether Mary would agree to a telephone check-in in 2 days. Mary is agreeable to this next step.

Health behavior theories have implications for individuals at risk for suicide in terms of service utilization, particularly the decision to seek treatment or follow-through with treatment recommendations and treatment adherence.

Summary

In this article we have discussed three health behavior theories (Health Belief Model, Stages of Change, Theory of Planned Behavior) in terms of their implications for understanding and facilitating treatment linkage and adherence in suicidal individuals. In addition, we have discussed these models' implications for a culturally informed understanding of treatment linkage and adherence. The clinical implications are numerous, ranging from asking patients to discuss the subjective norms about illness and treatment in their family to providing psychoeducation to patients about illness severity and the availability of evidence-based treatments.

Acknowledgments

We thank Ryan Hill for his assistance with this manuscript.

Research was supported by an NIMH R34 Award to Dr. Cheryl King, Principal Investigator, "Adolescent Emergency Patients: Suicide Risk Detection and Treatment Facilitation" (R34 MH079123).

References

- Adams J, Scott J. Predicting medication adherence in severe mental disorders. *Acta Psychiatrica Scandinavica*. 2000; 101:119–124. [PubMed: 10706011]
- Ajzen I. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*. 1991; 50:179–211.
- Ajzen I, Driver BL. Prediction of leisure participation from behavioral, normative, and control beliefs: An application of the theory of planned behavior. *Leisure Sciences*. 1991; 13(3):185–204.
- Albarracin D, Johnson BT, Fishbein M, Muellerleile PA. Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin*. 2001; 127(1):142–161. [PubMed: 11271752]
- Azocar F, Miranda J, Dwyer EV. Treatment of depression in disadvantaged women. *Women & Therapy*. 1996; 18(3–4):91–105.
- Beals J, Novins DK, Whitesell NR, Spicer P, Mitchell CM, Manson SM. Prevalence of mental disorders and utilization of mental health services in two American Indian reservation populations:

- Mental health disparities in a national context. *The American Journal of Psychiatry*. 2005; 162(9): 1723–1732. [PubMed: 16135633]
- Becker MH. The health belief model and personal health behavior. *Health Education Monographs*. 1974; 2
- Breland-Noble AM. Black adolescents. *Psychiatric Annals*. 2004; 34(7):535–538.
- Breland-Noble AM, Bell C, Nicolas G. Family first: The development of an evidence-based family intervention for increasing participation in psychiatric clinical care and research in depressed African American adolescents. *Family Process*. 2006; 45(2):153–169. [PubMed: 16768016]
- Brent D, Greenhill LL, Compton S, Emslie GJ, Wells K, Walkup JT, et al. The Treatment of Adolescent Suicide Attempters Study (TASA): Predictors of suicidal events in an open treatment trial. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2009; 48(10):987–996. [PubMed: 19730274]
- Brown GK, Ten Have TR, Henriques GR, Xie SX, Hollander JE, Beck AT. Cognitive therapy for the prevention of suicide attempts: A randomized controlled trial. *Journal of the American Medical Association*. 2005; 294(5):563–570. [PubMed: 16077050]
- Cabassa LJ, Lester R, Zayas LH. 'It's like being in a labyrinth': Hispanic immigrants' perceptions of depression and attitudes toward treatments. *Journal of Immigrant and Minority Health*. 2007; 9(1): 1–16. [PubMed: 17001516]
- Compton MT, Esterberg ML. Treatment delay in first-episode nonaffective psychosis: A pilot study with African American family members and the theory of planned behavior. *Comprehensive Psychiatry*. 2005; 46(4):291–295. [PubMed: 16175761]
- DeRubeis RJ, Hollon SD, Amsterdam JD, Shelton RC, Young PR, Salomon RM, et al. Cognitive therapy vs medications in the treatment of moderate to severe depression. *Archives of General Psychiatry*. 2005; 62:409–416. [PubMed: 15809408]
- Duarté-Vélez YM, Bernal G. Suicide behavior among Latino and Latino adolescents: Conceptual and methodological issues. *Death Studies*. 2007; 31(5):425–455.
- Fenton W, Blyler CR, Heinsen RK. Determinants of medication compliance in schizophrenia: Empirical and clinical findings. *Schizophrenia Bulletin*. 1997; 23(4):637–651. [PubMed: 9366000]
- Fishbein M. The role of theory in HIV prevention. *AIDS Care*. 2000; 12(3):273–278. [PubMed: 10928203]
- Freedenthal S. Challenges in assessing intent to die: Can suicide attempters be trusted? *Omega: Journal of Death and Dying*. 2007; 55(1):57–70.
- Glanz, K.; Rimer, BK.; Lewis, FM. The scope of health behavior and health education. In: Glanz, K.; Rimer, BK.; Lewis, FM., editors. *Health behavior and health education: Theory, research, and practice*. 3rd ed.. Jossey-Bass; San Francisco: 2002. p. 3-21.
- Glanz, K.; Rimer, BK.; Viswanath, K. *Health behavior and health education: Theory, research, and practice*. 4th ed.. John Wiley and Sons; San Francisco: 2008.
- Goldston DB, Molock SD, Whitbeck LB, Murakami JL, Zayas LH, Hall GCN. Cultural considerations in adolescent suicide prevention and psychosocial treatment. *American Psychologist*. 2008; 63(1): 14–31. [PubMed: 18193978]
- Grote NK, Zuckoff A, Swartz H, Bledsoe SE, Geibel S. Engaging women who are depressed and economically disadvantaged in mental health treatment. *Social Work*. 2007; 52(4):295–308. [PubMed: 18232240]
- Henshaw EJ, Freedman-Doan CR. Conceptualizing mental health care utilization using the health belief model. *Clinical Psychology: Science and Practice*. 2009; 16(4):420–439.
- Janz, NK.; Champion, VL.; Strecher, VJ. The health belief model. In: Glanz, K.; Rimer, BK.; Lewis, FM., editors. *Health Behavior and Health Education*. John Wiley and Sons; San Francisco: 2002.
- Joe S, Baser RE, Breeden G, Neighbors HW, Jackson JS. Prevalence of and risk factors for lifetime suicide attempts among blacks in the United States. *JAMA*. 2006; 296(17):2112–2123. [PubMed: 17077376]
- Kazantzis N, Deane FP, Ronan KR. Homework assignments in cognitive and behavioral therapy: A meta-analysis. *Clinical Psychology: Science and Practice*. 2000; 7:189–202.

- King CA, Hovey JD, Brand E, Wilson R. Suicidal adolescents after hospitalization: Parent and family impacts on treatment follow-through. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1997; 36(1):85–93. [PubMed: 9000785]
- Klein JB, Jacobs RH, Reinecke MA. Cognitive-behavioral therapy for adolescent depression: A meta-analytic investigation of changes in effect-size estimates. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2007; 46(11):1403–1413. [PubMed: 18049290]
- Leong FTL, Leach MM, Yeh C, Chou E. Suicide among Asian Americans: What do we know? What do we need to know? *Death Studies*. 2007; 31(5):417–434. [PubMed: 17554837]
- Lewin, K.; Dembo, T.; Festinger, L.; Sears, PS.; Hunt, JM. Level of aspiration personality and the behavior disorders. Ronald Press; Oxford England: 1944. p. 333-378.
- Lewis CC, Simons AD, Silva SG, Rohde P, Small DM, Murakami JL, et al. The role of readiness to change in response to treatment of adolescent depression. *Journal of Consulting and Clinical Psychology*. 2009; 77(3):422–428. [PubMed: 19485584]
- Linehan MM, Comtois KA, Murray AM, Brown MZ, Gallop RJ, Heard HL, et al. Two-year randomized controlled trial and follow-up of dialectical behavior therapy vs therapy by experts for suicidal behaviors and borderline personality disorder. *Archives of General Psychiatry*. 2006; 63(7):757–766. [PubMed: 16818865]
- McConaughy EA, Prochaska JO, Velicer WF. Stages of change in psychotherapy: Measurement and sample profiles. *Psychotherapy: Theory, Research & Practice*. 1983; 20(3):368–375.
- McKay MM, Hibbert R, Hoagwood K, Rodriguez J, Murray L, Legerski J, et al. Integrating evidence-based engagement interventions into 'real world' child mental health settings. *Brief Treatment and Crisis Intervention*. 2004; 4(2):177–186.
- McKay MM, McCadam K, Gonzales JJ. Addressing the barriers to mental health services for inner city children and their caretakers. *Community Mental Health Journal*. 1996; 32(4):353–361. [PubMed: 8840078]
- Miklowitz DJ, Hooley JM. Developing family psychoeducational treatments for patients with bipolar and other severe psychiatric disorders: A pathway from basic research to clinical trials. *Journal of Marital and Family Therapy*. 1998; 24(4):419–435. [PubMed: 9802003]
- Miller, WR.; Rollnick, S. Motivational interviewing: Preparing people to change addictive behavior. 2nd ed. Guilford Press; New York: 2002.
- Minugh PA, Rice C, Young L. Gender, health beliefs, health behaviors, and alcohol consumption. *American Journal of Drug and Alcohol Abuse*. 1998; 24(3):483–497. [PubMed: 9741948]
- Miranda J, Chung JY, Green BL, Krupnick J, Siddique J, Revicki DA, et al. Treating depression in predominantly low-income young minority women: A randomized controlled trial. *JAMA: Journal of the American Medical Association*. 2003; 290(1):57–65.
- Molock SD, Matlin S, Barksdale C, Puri R, Lyles J. Developing suicide prevention programs for African American youth in African American churches. *Suicide & Life-Threatening Behavior*. 2008; 38:323–333. [PubMed: 18611131]
- Montano D, Kasprzyk D, von Haefen I, Fishbein M. Toward an understanding of condom use behaviours: A theoretical and methodological overview of Project SAFER. *Psychology, Health & Medicine*. 2001; 6(2):139–150.
- National Cancer Institute Monographs. Theory at a glance: A guide for health promotion practice. 2005.
- Neighbors HW, Musick MA, Williams DR. The African American minister as a source of help for serious personal crises: Bridge or barrier to mental health care? *Health Education & Behavior*. 1998; 25(6):759–777. [PubMed: 9813746]
- Painter JE, Borba CPC, Hynes M, Mays D, Glanz K. The use of theory in health behavior research from 2000 to 2005: A systematic review. *Annals of Behavioral Medicine*. 2008; 35:358–362. [PubMed: 18633685]
- Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*. 1983; 51(3):390–395. [PubMed: 6863699]

- Prochaska, JO.; Redding, CA.; Evers, KE. The transtheoretical model and stages of change. In: Glanz, K.; Rimer, BK.; Lewis, FM., editors. *Health behavior and health education: Theory, research, and practice*. 3rd ed.. Josey-Bass; San Francisco: 2002. p. 99-120.
- Quinn KM, Laidlaw K, Murray LK. Older peoples' attitudes to mental illness. *Clinical Psychology & Psychotherapy*. 2009; 16(1):33-45. [PubMed: 19170041]
- Rosenstock IM. Why people use health services. *Milbank Memorial Fund Quarterly*. 1966; 44(3):94-124. [PubMed: 5967464]
- Rotheram-Borus MJ, Piacentini J, Cantwell C, Belin TR, Song J. The 18-month impact of an emergency room intervention for adolescent female suicide attempters. *Journal of Consulting and Clinical Psychology*. 2000; 68(6):1081-1093. [PubMed: 11142542]
- Rotheram-Borus MJ, Piacentini J, Van Rossem R, Graae F, Cantwell C, Castro-Bianco D, Feldman J. Enhancing treatment adherence with a specialized emergency room program for adolescent suicide attempters. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1996; 35:654-663. [PubMed: 8935213]
- Rusch N, Corrigan PW. Motivational interviewing to improve insight and treatment adherence in schizophrenia. *Psychiatric Rehabilitation Journal*. 2002; 26(1):23-32. [PubMed: 12171279]
- Sapra M, Vahia IV, Reyes PN, Ramirez P, Cohen CI. Subjective reasons for adherence to psychotropic medication and associated factors among older adults with schizophrenia. *Schizophrenia Research*. 2008; 106(2-3):348-355. [PubMed: 18851906]
- Schensul, SL.; Schensul, JJ.; Lecompte, MD. *Essential ethnographic methods: Observations, interviews, and questionnaires*. AltaMira Press; Walnut Creek, CA: 1999.
- Shaikh AR, Yaroch AL, Nebeling L, Yeh M-C, Resnicow K. Psychosocial predictors of fruit and vegetable consumption in adults: A review of the literature. *American Journal of Preventive Medicine*. 2008; 34(6):535-543. [PubMed: 18471592]
- Sokero P, Melartin T, Rytsala HJ, Leskela US, Lestela-Mielonen PS, Isometsä E. Adequacy of, attitudes toward, and adherence to treatments by suicidal and nonsuicidal depressed patients. *The Journal of Nervous and Mental Disease*. 2008; 96(3):223-229. [PubMed: 18340258]
- Spirito A, Levy S, Kurkjian J, Lewander W, Devost L, Plummer B, et al. Adolescent suicide attempts: Outcomes at follow-up. *American Journal of Orthopsychiatry*. 1992; 62(3):464-468. [PubMed: 1497112]
- Trautman PD, Stewart N, Morishima A. Are adolescent suicide attempters noncompliant with outpatient care? *Journal of the American Academy of Child & Adolescent Psychiatry*. 1993; 32(1): 89-94. [PubMed: 8428890]
- U.S. DHHS. *Mental health: Culture, race, and ethnicity. A Supplement to Mental Health: A Report of the Surgeon General*. U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services; Rockville, MD: 2001.
- Walker RL, Utsey SO, Bolden MA, Williams III O. Do sociocultural factors predict suicidality among persons of African descent living in the U.S.? *Archives of Suicide Research*. 2005; 9(2):203-217. [PubMed: 16020163]
- Wang PS, Lane M, Olfson M, Pincus HA, Wells KB, Kessler RC. Twelve-month use of mental health services in the United States: Results from the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 2005; 62(6):629-640. [PubMed: 15939840]
- Yeh M, Hough RL, McCabe K, Lau A, Garland A. Parental beliefs about the causes of child problems: Exploring racial/ethnic patterns. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2004; 43(5):605-612. [PubMed: 15100567]
- Zane, N.; Mak, W. Major approaches to the measurement of acculturation among ethnic minority populations: A content analysis and an alternative empirical strategy. In: Chun, KM.; Balls Organista, P.; Marin, G., editors. *Acculturation: Advances in theory, measurement, and applied research*. American Psychological Association; Washington, DC: 2003. p. 39-60.

Table 1

Health Behavior Theories: Clinical Application to Treatment Linkage and Adherence

Theory	
Key Concept	
Health Belief Model	
Perceived Susceptibility	Belief at risk for negative outcomes
Perceived Severity	Belief problem is serious enough to warrant treatment
Perceived Benefits	Belief about benefits of treatment
Perceived Barriers	Beliefs about internal/external barriers to treatment
Cues to Action	Factors that increase treatment “readiness”
Self-efficacy	Belief about capability to follow treatment recommendations
Stages of Change	
Precontemplation	No intention to seek treatment in near future
Contemplation	Intention to initiate treatment in near future
Preparation	Steps taken to initiate treatment with plan to take additional steps soon
Action	Has linked to treatment, still within initial phase
Maintenance	Adherence maintained for significant time
Theory of Planned Behavior	
Behavioral Intention	Intention to link with and adhere to treatment
Attitude	Belief that treatment is of value
Subjective Norm	Family and friends' beliefs about treatment
Behavioral Control	Belief has power in treatment decisions or therapy process