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Risk Factors, Warning Signs, and Drivers of Suicide: What Are They, How Do They Differ, and Why Does It Matter?

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Research investigating suicide attempts and deaths by suicide has yielded many specific risk factors and warning signs for future suicidal behaviors. Yet, even though these variables are each valuable for suicide prevention efforts, they may be limited in their applicability to clinical practice. The differences among risk factors, warning signs, and "drivers," which are person-specific variables that lead individuals to desire death by suicide, are highlighted. The scarce evidence on drivers is described and specific recommendations for conducting future drivers-focused research and targeting them in clinical practice are suggested.

In this article we review the similarities and differences among suicide risk factors, warning signs, and drivers of suicide in such a way as to be relevant for both researchers and practicing clinicians. To do so, we begin by defining and briefly reviewing each construct, specifically highlighting the sparse literature available for drivers. Then, we provide specific recommendations for future research in this area and for targeting drivers in practice. Finally, we summarize this review with an eye toward clinical applicability.

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RISK FACTORS FOR SUICIDE

Empirical research has identified and confirmed hundreds of suicide-specific risk factors or characteristics that may increase the likelihood that individuals will desire, attempt, or die by suicide at some point in their lives (O'Connor & Nock, 2014). Practitioners have consistently been advised to assess these factors when working with suicidal patients, as they have been linked historically with both imminent ("acute") and long-term ("chronic") suicide risk levels (e.g., Hall, Platt, & Hall, 1999). However, recent evidence increasingly suggests that the clinical utility of risk factors may be more limited than previously thought. For example, although risk factors have been linked with the experience of suicidal ideation (e.g., Kessler, Borges, & Walters, 1999), they cannot differentiate people with suicidal ideation who have or have not attempted suicide (Klonsky & May, 2014). In addition, Rudd (2003, 2008) has observed that the extensive time frame and homogenous patient populations needed to investigate a single risk factor means that

the information yielded might not directly translate to clinical judgments about an individual patient's acute risk level. This conclusion reflects the lack of a direct correlation between the number of risk factors a patient endorses and his or her degree of risk, despite previous suggestion of such a relation (e.g., Mościcki, 1997; Murphy, Wetzel, Robins, & McEvoy, 1992). Because of these limitations, researchers have attempted to identify factors that are more directly related to acute risk; to date, these have included "warning signs" (Rudd, 2003, 2008; Rudd et al., 2006) and "drivers" (Jobes, Comtois, Brenner, & Gutierrez, 2011).

WARNING SIGNS FOR SUICIDE

Rudd (2008) proposed that warning signs might enable professionals and lay individuals to intervene when acute suicidal crises emerge, in a manner analogous to how warning signs for heart attacks (e.g., arm pain, chest pain, and shortness of breath) can be identified and used to inform medical treatment. To streamline the thousands of warning signs listed on public Internet sites (e.g., Mandrusiak et al., 2006), the American Association of Suicidology (AAS) convened a working group of expert suicidologists in 2003. This panel distilled available information into a list of 10 suicide-specific warning signs (e.g., purposelessness, hopelessness, withdrawal, anger/aggression; Rudd et al., 2006), which have been widely disseminated and hold considerable promise for public health and educational campaigns. Yet, despite the potential role that these warning signs can play in suicide prevention efforts, questions remain about their ideal use in clinical practice.

For example, while it has been proposed that warning signs are only meaningful if they are applied as a constellation of factors (Rudd, 2008), the individual warning signs might relate to suicidal crises in different ways (e.g., Britton, Ilgen, Rudd, & Conner, 2012; McSwain, Lester, & Gunn, 2012). Most notably, the only AAS warning sign shown to actually differentiate individuals who experienced suicidal ideation and did make a suicide attempt from individuals who experienced suicidal ideation but did not make an attempt in one study was anger/aggression (Gunn, Lester, & McSwain, 2011). Although this specific warning sign may thus be particularly important to consider during risk assessment, clinical decisions based on single characteristics are problematic. Specifically, Fowler (2012) has suggested that, because changes in warning signs such as anger and aggression can be (and often are) observed in patients who are not acutely suicidal, the risk of false positives is high and the possibility of iatrogenic consequences for patients (such as hospitalization) must be considered carefully. Given these limitations, Fowler (2012) proposed that practitioners should not simply rely on risk factors or warning signs independently when assessing safety. Instead, he suggests that risk factors and warning signs should be assessed together in a collaborative, patient-specific manner to maximize the provider's understanding of what is "driving" the individual patient's suicidality.

DRIVERS OF SUICIDE

Suicide drivers reflect an emerging, therapeutic focus that has been discussed primarily within the Collaborative Assessment and Management of Suicidality framework (CAMS; Jobes, 2006). In describing suicide drivers, Jobes et al. (2011) suggested a way to organize warning signs and risk factors that reflects Fowler's assessment recommendations (2012) and that contextualizes a patient's unique struggles and pain. Specifically, they proposed that direct drivers include the idiosyncratic internal experiences, behaviors, and external situations that a patient associates with his or her suicidal crisis (i.e., increased suicidal ideation or a past suicide attempt). Jobes et al. define *direct drivers* as "suicide-specific thoughts, feelings, and behaviors which lead to suicidality for the patient"

(p. 389). In this way, direct drivers could be thought of as patient-specific warning signs. Furthermore, Jobes et al. then noted that indirect drivers include any circumstances that can lead a patient to believe that his or her life is not worth living, such as negative life events, other psychosocial stressors, and symptoms of psychiatric illnesses. Specifically, they state that *indirect drivers* include "life circumstances which are further contributing to suicidality" such as, "homelessness, depression, substance abuse, posttraumatic stress disorder, isolation" (p. 389), but are not endorsed as what is driving a suicidal crisis in a client. Indirect drivers thus do not necessarily relate to a specific, acute suicidal crisis. However, because they provide a context for a patient's personal pain, they represent an essential part of his or her suicide narrative (e.g., Michel et al., 2002). To demonstrate the differences and similarities between direct and indirect drivers, take for an example, a patient admitted to a psychiatric inpatient unit after a suicide attempt who may discuss feelings of burdensomeness on others as the reason for his or her attempt. For this client, perceptions of burdensomeness reflect his or her direct driver for suicide. Indirect drivers of this client's suicide desire may include financial instability or mental health disorders that influence their ability to keep a job and hence contribute to feelings of burdensomeness.

These direct and indirect drivers can be applied quickly and effectively to clinical care for suicidal patients. However, because they emphasize the importance of a specific patient's unique narrative, they do not lend themselves to public health and educational campaigns in the same way as the AAS's list of warning signs. Similarly, the individualized nature of drivers makes them more challenging to investigate empirically than risk factors, which are by definition static and often unmodifiable (e.g., Rudd, 2008). Additionally, researchers targeting suicide attempters suffering from severe psychotic symptoms and serious cognitive impairment may be wary of conducting suicide driver research as study participants may struggle to understand or illustrate what personally led to their suicidal crises. By extension, clinicians may have concerns about attempting to elicit information about suicide drivers from such patients. However, while the assumption that some patients may not be able to accurately identify their suicide drivers is intuitive, this idea has not been empirically investigated. Similarly, we suggest that even though an individual may identify a suicide driver that is not actually driving his or her suicidality (maybe in part due to cognitive impairment or memory disturbances), what is most important is what the individual believes is driving his or her suicidal crisis. Even though this information may not truly reflect what is driving the suicidal behavior in the individual, it signifies a person-specific warning sign that should be integrated into the conceptualization of the person's suicide concerns. Of course, there may be instances in which the assessment of any suicide driver may not be possible (i.e., clients suffering from extreme catatonic symptoms or certain kinds of dysphasia); the assessment of suicide risk factors or warning signs may be difficult, if not impossible, in these situations as well. Finally, the identification and measurement of suicide drivers may be confounded by memory disturbances in cognitively healthy research participants/patients, as suicide attempts have been linked to poor autobiographical memory specificity (Leibetseder, Rohrer, Mackinger, & Fartacek, 2006). Indeed, the challenges inherent to conducting drivers-related research might account, at least in part, for the notable scarcity of studies in this area to date.

The authors of the current study observed this scarcity when conducting a literature review to find empirical studies that targeted modifiable drivers for adult patients (see Table 1 for a detailed overview of this review's process and outcomes). Not a single empirical study discussed drivers as defined earlier or linked a driver with suicide attempts or deaths for adults. As such, we conducted a second review with broader inclusion criteria, specifically electing to

also include articles that discussed modifiable risk factors. The term *risk factor* was included despite the conceptual differences between these variable classes in case some studies classified "drivers" as risk factors (because the term *driver* is relatively new).

To be included in the full-text review in the second literature search, articles needed to satisfy six inclusion criteria that are listed in Table 1. Inclusion criteria were selected to review articles that depict factors that potentially drive suicide attempts and deaths in adults. Thus, only studies focused on suicide attempts and death by suicide in adult clinical samples were reviewed. The authors also sought to review articles targeting suicide drivers that may reasonably be modified through evidence-based psychological interventions. This criterion was set as the CAMS therapeutic framework requires collaborative treatment planning in order to reduce suicide drivers and decrease future suicidal behavior in clients and encourages relying on evidence-based interventions whenever possible (Jobes et al., 2011). Finally, this literature search aimed to review articles that employed rigorous empirical methodology. Thus, only articles that presented original, quantitative data gathered through case–control/case series, experimental, or meta-analytic methodologies were included in the full-text review.

Over 300 articles related to modifiable risk factors were obtained in this second review, but not one discussed drivers as described in this study (see Table 1 for a

TABLE 1
Overview of Suicide Driver Literature Reviews

	Literature Search 1	Literature Search 2
Search sources	MEDLINE and PsycINFO	MEDLINE and PsycINFO
Search terms	Suicid* and drive*	suicid* and theory, suicid* and model, suicid* and cause*, suicid* and predict*, suicid* and drive* suicid* and risk factor*
Number of articles obtained	148	More than 3,000
Inclusion criteria for full-text review	1 Published in English in past 20 years (1992–2012) 2 Adult clinical sample 3 Suicide attempts or deaths by suicide as an outcome variable 4 Assessed a modifiable psychological driver of suicide 5 Original, quantitative data presented 6 Case–control/case series, experimental, or meta-analysis methodology	1 Published in English in past 20 years (1992–2012) 2 Adult clinical sample 3 Suicide attempts or deaths by suicide as an outcome variable 4 Assessed a modifiable psychological driver of suicide 5 Original, quantitative data presented 6 Case–control/case series, experimental, or meta-analysis methodology
Number of articles meeting inclusion criteria	0	More than 300
Number of articles identifying modifiable drivers of suicide	0	0

Note. The term *modifiable* was operationalized in our reviews as characteristics that could be altered through a course of psychotherapy.

more detailed overview of this review's process and outcomes). Some studies initially seemed to discuss drivers in that they targeted unique patient populations with potentially idiosyncratic concerns (e.g., Compton, Thompson, & Kaslow, 2005; Darke & Kaye, 2004; Roy, 2003). Yet, none explicitly gauged what *drove* suicide attempts or deaths in their samples. Similarly, more recent research investigated theoretically derived risk factors of suicide in relationship to suicide attempts, such as thwarted belongingness, perceived burdensomeness, and acquired capability (e.g., Anestis & Joiner, 2011). However, these studies also did not investigate these factors in a way that can determine if their presence drove suicidal crises in study participants (i.e., participants who attempted suicide were compelled to attempt suicide because of their perceptions of burdensomeness or feelings of extreme social disconnection). Thus, although the case-specific modifiable risk factors may serve as drivers for individual patients, further empirically-based conclusions cannot be drawn given the lack of relevant available literature. The current literature relies heavily on correlations between risk factors and suicide-specific outcomes. What is lacking are studies examining the causal links between theoretical constructions, specific outcomes targeting those factors, and resulting reductions in suicide-related behaviors.

RECOMMENDATIONS FOR FUTURE SUICIDE DRIVER RESEARCH

Future research endeavors targeting drivers as an explicit focus should be strongly considered for several reasons. First, studies along these lines might inform theories about suicidal behaviors in new ways, especially if such research were to emphasize descriptive, qualitative methodologies which focus on suicidal patients' individual experiences. Specifically, several factors have been theorized to relate to patients' suicidal desires and behaviors, including extreme psychological pain and stress (Shneidman, 1985), thwarted belongingness and perceived burdensomeness (Joiner, 2005), feelings of entrapment and defeat (O'Connor, 2011), and an attentional bias to suicide-related cues (Wenzel & Beck, 2008). Patients' perspectives on the factors that drive their own suicidal thoughts and behaviors may deepen our understanding of how theoretically derived factors manifest for them. Thus, a clinician's assessment of suicide drivers should include, and even start with, the probing of theoretically derived factors such as psychological pain, perceptions of burdensomeness, and feelings of entrapment and defeat, but a simple understanding that a client experiences these feelings may not provide enough information regarding what is driving the client's suicidal behavior. As one example, because factors like perceived burdensomeness have been empirically linked with suicidal crises (e.g., Joiner et al., 2002; Van Orden, Lynam, Hollar, & Joiner, 2006), questions have been included in many risk assessment measures to gauge whether or not a suicidal patient experiences the perception of feeling like a burden on significant others (e.g., Jobes, Jacoby, Cimbolic, & Hustead, 1997). Yet, knowing whether or not someone feels like a burden may not be as clinically useful as knowing *what* makes *this person* feel like a burden.

Take, for example, a client who attempted suicide and presents with perceptions of burdensomeness. Although an understanding that the client experiences these thoughts and feelings provides general insight into the client's suicide risk, a deeper understanding of the patient's suicidal crises can be established following the assessment of perceived burdensomeness as a potential driver of suicide. This assessment may yield important clinical information including who the individual feels as though he or she burdens (e.g., partner and children) and why the individual feels as though his or her existence burdens others (e.g., the client's struggle with psychopa-

thology such as major depressive disorder or posttraumatic stress disorder and how it influences the client's family). Thus, the assessment of suicide drivers, specifically theoretically derived factors that relate to suicidal behavior, helps implement important theoretical knowledge into clinical practice. We propose that theories linking specific risk factors to near-term suicide-related behavior need to be empirically tested. The results of such research should then inform clinical assessment practices by guiding the categories of factors where assessments should begin to ultimately identify person-specific drivers of suicide which become the focus of treatment.

Additionally, drivers-focused research might illustrate factors that increase a person's chance of transitioning from suicidal ideation to attempts in a way that neither risk factors nor warning signs have yet been able to do. Although the study of suicide drivers will likely not, by itself, yield a comprehensive explanation for what prompts suicide ideation to transition into suicidal behavior, the identification of person-specific warning signs through drivers research may help move the field closer to a theoretical understanding of this ideation to action transition. For example, although there are likely unique factors for individual patients that spur them to make a suicide attempt, it may be the case that some patterns in these factors emerge when many accounts of attempt drivers are summed and considered together. When attempting to understand these patterns, suicide driver research may benefit from studying important theory-driven variables in their relationship to the transition from ideation to action. As theoretical frameworks such as the interpersonal-psychological theory of suicidal behavior (Joiner, 2005) and the integrated-motivational volitional model of suicide (O'Connor, 2011) indicate specific variables (e.g., acquired capability, impulsivity, and access to means) that may explain the transition from suicide ideation to action, future drivers research may benefit by studying how participant-identified drivers interact with these theory-driven constructs to predict this important transition.

Our understanding of these possible patterns could be honed further by determining whether there are differences in drivers in different categories, such as the severity of patients' suicidal crises (intensified ideation or a suicide attempt) or other general characteristics (e.g., life circumstances, demographic variables, and psychiatric diagnoses). Although drivers hold conceptual promise for clinical practice, empirical studies are warranted to determine the utility of determining suicide risk in this way. Such research might include investigating patients' satisfaction with and general experience of the risk assessment process following a traditional risk assessment or one steeped in a more individualized, drivers-focused philosophy. In addition, it could be helpful to determine the outcomes of these risk assessment frameworks, particularly with respect to their accuracy for determining patients' acute risk levels. With this information, recommendations could be made for altering the risk assessment process and the treatment targets considered essential for suicide-focused psychosocial interventions.

Future suicide driver research would benefit from the use of both qualitative and quantitative approaches. The utilization of questionnaires with open field responses as well as interview questions described in cognitive therapy for suicide (Wenzel, Brown, & Beck, 2009) and previous qualitative studies regarding suicide (Kraft, Jobes, Lineberry, Conrad, & Kung, 2010) would help measure suicide drivers in a person-specific way. Such questions include the following: "Why suicide?" "Why do you want to kill yourself?" "What makes you feel like your life was not worth living?" "What went through your head just before your last suicide attempt?" In addition, quantitative measures of suicide drivers can be integrated into theory-driven research. Currently, the only assessment measure of suicide drivers is the Suicide Status Form (SSF), which is a crucial element of the CAMS therapeutic framework (Jobes

et al., 1997). This measure assesses five potential drivers based on theory-driven suicide research: (1) psychological pain (hurt, anguish, and misery), (2) stress (feeling pressured or overwhelmed), (3) agitation (emotional urgency), (4) hopelessness, and (5) self-hate. Clients rate their experience of these drivers on a 1 (*low*) to 5 (*high*) Likert-type scale, as well as rank order these drivers on the importance of each in relation to why they attempted suicide or want to die by suicide (1 being the most important and 5 being the least important). Although not an exhaustive list of suicide drivers, the SSF is a well-validated measure of suicide drivers that can be utilized in suicide driver research (Conrad et al., 2009). Open field response questions that produce qualitative data about drivers and the SSF (which yields quantitative data regarding suicide drivers) could spur the creation of more exhaustive standardized measures of suicide drivers, such as driver checklists. Such checklists could be easily integrated into theory-driven research.

Along with the refinement and creation of suicide driver measures, suicide driver research would be aided in the use of creative sampling techniques. Ideographic research designs, such as single case experimental designs, to determine the validity of suicide drivers predicting acute suicide risk and suicidal behavior could be effectively incorporated in driver research. This assertion is in line with Barlow and Nock's (2009) calls for ideographic research to further the field of clinical science. Similarly, Davidson, Anestis, and Gutierrez (in press) urge the use of ecological momentary assessment (EMA) in suicide research, stating the methodology is well suited to suicide research where minimizing recall bias is important. The authors also argue that EMA allows for discovering subtle interactions between variables and tracking them over time, increasing the probability of uncovering causal relationships. The real-time assessment of what is driving suicidal desire in participants utilizing driver checklists or the SSF may help demonstrate which potential suicide drivers are most closely linked to suicidal behavior. Due to the ideographic nature of suicide drivers, future research may help pioneer the use of sophisticated and unique sampling methodologies to further advance the prediction of suicidal behavior.

CLINICAL RECOMMENDATIONS FOR SUICIDE DRIVERS

Until such clinically focused research is conducted, practitioners hoping to incorporate the assessment of drivers into their practice could consider doing so in the following general, evidence-based manner. Suicide drivers comprise important elements of both the assessment and treatment of suicidality in the CAMS therapeutic framework. Clinicians and clients collaboratively assess what is driving suicidal behavior in the client and how the client may engage in suicidal coping to manage these suicide drivers. Similarly, clinicians and clients collaboratively engage in treatment planning to create crisis intervention plans and problem-focused intervention plans that focus on the reduction of suicide drivers through evidenced-based clinical interventions or treatment referrals. These elements can help serve as a general framework for assessing and targeting suicide drivers in efforts to reduce future suicidal behavior.

More specifically, direct and indirect drivers can easily be observed in idiosyncratic "stories" about how patients' life events and circumstances led to their suicidal crises (e.g., Michel & Valach, 2011). Such stories should ideally contextualize the experiences specifically associated with patients' suicidal behaviors within their unique psychosocial stressors; allowing patients to relay a narrative that broadly describes their acute and chronic struggles has been suggested anecdotally (Jobes & Ballard, 2011) and shown empirically to improve their perceptions of the therapeutic alliance (Michel, Dey, Stadler, & Valach, 2004). In addition, maintaining this narrative framework allows practitioners to gauge

whether direct and indirect drivers, as described previously, have been adequately identified.

To elicit a patient's suicide narrative, practitioners are encouraged to verbally and nonverbally convey openness for and interest in whatever patients are open to disclosing, as suicidal patients are more likely to convey this information when they believe that the practitioner genuinely cares (Michel & Valach, 2011). Michel and Valach suggested two examples of verbal prompts for this process: "First, I would like you to tell me in your own words how it came about that you harmed yourself" and "I would like you to tell me the story of what led to the suicidal crisis. Just let me listen to you" (p. 71). Such prompting provides patients with a sense of control over the dialogue, and it allows clinicians to note how the patients understand their pain and suffering. However, practitioners may find that they do not have a deep understanding of their patient's unique drivers even after such prompting. If this happens, they are first encouraged to reflect and praise the patient for conveying the information he or she was willing to share. Then, they might consider applying another strategy based on whether they would like further clarification on direct or indirect drivers.

Direct drivers can be assessed further when practitioners have a deeper knowledge about the internal (cognitions, emotions, and physiological sensations) and external (situations) factors associated with acute crises. As such, they might consider providing more structure to the suicide narrative task. For example, patients could be asked to describe the acute crisis as if it were happening in the present moment (e.g., Wenzel et al., 2009) or to begin with the major "decision point" associated with increased risk and to go "backward in time" until relevant experiences have been identified. Such an approach has recently been employed by Bagge, Littlefield, Conner, Schumacher, and Lee (2014), who conducted a study of suicide attempters to try to identify what differentiated the hour prior to a suicide attempt from the other 23 hours leading up to the attempt.

Alternatively, information about direct drivers can be obtained through completing a focused account of a crisis using strategies such as functional analyses, chain analysis (Linehan, 1993; Rizvi & Ritschel, 2013), or diagraming the patient's unique suicide mode (e.g., Rudd, 2000). Indirect drivers can be assessed in greater detail by asking patients to clarify their own general risk factors. Specifically, as suggested previously, while it is helpful to know that a person generally experiences a sense of being a burden, it can be more helpful in clinical work to know what is driving this experience. There are risk assessment measures such as the SSF in CAMS (Jobes et al., 1997) that are specifically designed to examine drivers in this way, although it may be the case that any assessment of risk factors conducted in an idiographic, collaborative, and validating manner could yield this information. In other words, practitioners should not feel wedded to the CAMS approach to conduct this type of assessment.

CONCLUSIONS

Research on suicide risk factors and warning signs has been conducted, and such research has influenced the creation of evidence-based interventions that specifically target suicide risk (e.g., Jobes, 2006; Wenzel et al., 2009). In addition, the growing awareness of these factors has allowed suicide to become a greater focus of public policy and wide-sweeping prevention efforts. For example, the World Health Organization has named September suicide prevention month to reduce the stigma of suicide. In addition, many countries have national suicide prevention crisis lines (e.g., National Suicide Prevention Lifeline; www.suicidepreventionlifeline.org), and at least one major health care system in the United States reduced suicides within their patient population by 75% over a 5-year

period (Coffey, 2007). However, suicide remains a major public health problem, with rates in the United States actually increasing since 2003 (McIntosh & Drapeau, 2014). It is quite possible that suicide rates would be rising much faster if all of these efforts were not in place, but these statistics also demonstrate that there is more work to be performed to prevent the loss of life by suicide.

To determine who is at risk for making a suicide attempt or dying by suicide, decades of empirical research has focused on identifying what risk factors and warning signs most directly predict these outcomes. Results of such studies consistently suggest that the presence of risk factors can highlight whether someone is more likely to engage in suicide-related behaviors at some point throughout his or her life (i.e., "chronic" risk). However, risk factors do not provide information about individuals' imminent risk for suicide attempt or reliably differentiate between those who think about or desire suicide and those who attempt to end their own lives (Klonsky & May, 2014). To overcome this limitation, warning signs for suicide were proposed as a way to highlight people who are at imminent risk for a suicidal crisis; yet, research has also demonstrated that most warning signs similarly lack the ability to identify who specifically is most likely to act on suicidal impulses (e.g., Gunn et al., 2011). Thus, future work designed to understand what variables can more successfully predict suicidal crises is clearly warranted.

We have proposed that one possible part of the solution to this problem is to focus on understanding person-specific drivers of suicide. Research should be conducted to determine whether such drivers can be accurately and reliably assessed. Evidence-based interventions can be applied, or developed, to target categories of drivers in randomized clinical trials. Ultimately, assessment tools will exist to identify suicide drivers that are then linked to the likely most effective interventions for any given patient, equipping providers with the tools they need to move their patients out of acute suicide risk. In the meantime, clinicians are encouraged to rethink their approach to suicide risk assessment and treatment planning. Providers can start by determining what is driving each individual patient's desire to die (i.e., what is the patient's interpretation of the specific trigger for an acute suicidal crisis) and then aggressively treat that issue, or issues, with the best available tools. Advancing the understanding of person-specific drivers of suicide may help move beyond adding to the list of hundreds of suicide risk factors and to make serious advances in saving lives and reducing the tragedy of suicide.

REFERENCES

ANESTIS, M. D., & JOINER, T. E. (2011). Examining the role of emotion in suicidality: Negative urgency as an amplifier of the relationship between components of the interpersonal–psychological theory of suicidal behavior and lifetime number of suicide attempts. *Journal of Affective Disorders*, *129*, 261–269. doi: 10.1016/j.jad.2010.08.006

BAGGE, C. L., LITTLEFIELD, A. K., CONNER, K. R., SCHUMACHER, J. A., & LEE, H.-J. (2014). Near-term predictors of the intensity of suicidal ideation: An examination of the 24 h prior to a recent suicide attempt. *Journal of Affective Disorders*, *165*, 53–58.

BARLOW, D. H., & NOCK, M. K. (2009). Why can't we be more idiographic in our research? *Perspectives on Psychological Science*, *4*, 19–21. doi: 10.1111/j.1745-6924.2009.01088.x

BRITTON, P. C., ILGEN, M. A., RUDD, M. D., & CONNER, K. R. (2012). Warning signs for suicide within a week of healthcare contact in veteran decedents. *Psychiatry Research*, *200*, 395–399.

COFFEY, C. E. (2007). Building a system of perfect depression care in behavioral health. *Joint Commission Journal on Quality and Patient Safety*, *33*, 193–199.

COMPTON, M. T., THOMPSON, N. J., & KASLOW, N. J. (2005). Social environment factors associated with suicide attempt among low-income African Americans: The protective role of family relationships and social support. *Social*

Psychiatry and Psychiatric Epidemiology, *40*, 175–185.

CONRAD, A. K., JACOBY, A. M., JOBES, D. A., LINEBERRY, T. W., SHEA, C. E., EWING, T. D., ET AL. (2009). A psychometric investigation of the suicide status form II with a psychiatric inpatient sample. *Suicide and Life-Threatening Behavior*, *39*, 307–320.

DARKE, S., & KAYE, S. (2004). Attempted suicide among injecting and noninjecting cocaine users in Sydney, Australia. *Journal of Urban Health*, *81*, 505–515.

DAVIDSON, C. L., ANESTIS, M. D., & GUTIERREZ, P. M. (in press). Ecological momentary assessment is a neglected methodology in suicidology. *Archives of Suicide Research*.

FOWLER, J. C. (2012). Suicide risk assessment in clinical practice: Pragmatic guidelines for imperfect assessments. *Psychotherapy*, *49*, 81–90.

GUNN, J. F., LESTER, D., & MCSWAIN, S. (2011). Testing the warning signs of suicidal behavior among suicide ideators using the 2009 National Survey on Drug Abuse and Health. *International Journal of Emergency Mental Health*, *13*, 147–154.

HALL, R. C. W., PLATT, D. E., & HALL, R. C. W. (1999). Suicide risk assessment: A review of risk factors for suicide in 100 patients who made severe suicide attempts: Evaluation of suicide risk in a time of managed care. *Psychosomatics*, *40*, 18–27.

JOBES, D. A. (2006). *Managing suicidal risk: A collaborative approach*. New York, NY: Guilford.

JOBES, D. A., & BALLARD, E. (2011). The therapist and the suicidal patient. In K. Michel & D. A. Jobes (Eds.), *Building a therapeutic alliance with the suicidal patients* (pp. 51–61). Washington, DC: American Psychological Association.

JOBES, D. A., COMTOIS, K., BRENNER, L., & GUTIERREZ, P. (2011). Clinical trial feasibility studies of the Collaborative Assessment and Management of Suicidality (CAMS). In R. C. O'Connor, S. Platt, & J. Gordon (Eds.), *International handbook of suicide prevention: Research, policy, & practice* (pp. 383–400). West Sussex, UK: Wiley-Blackwell.

JOBES, D. A., JACOBY, A. M., CIMBOLIC, P., & HUSTEAD, L. A. T. (1997). Assessment and treatment of suicidal clients in a university counseling center. *Journal of Counseling Psychology*, *44*, 368–377.

JOINER, T. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.

JOINER, T. E., PETTIT, J. W., WALKER, R. L., VOELZ, Z. R., CRUZ, J., RUDD, M. D., & LESTER, D. (2002). Perceived burdensomeness and suicidality: Two studies on the suicide notes of those attempting and those completing suicide. *Journal of Social and Clinical Psychology*, *21*, 531–545.

KESSLER, R. C., BORGES, G., & WALTERS, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry*, *56*, 617–626.

KLONSKY, E. D., & MAY, A. M. (2014). Differentiating suicide attempters from suicide ideators: A critical frontier for suicidology research. *Suicide and Life-Threatening Behavior*, *44*, 1–5. doi: 10.1111/sltb.12068.

KRAFT, T. L., JOBES, D. A., LINEBERRY, T. W., CONRAD, A., & KUNG, S. (2010). Brief report: Why suicide? Perceptions of suicidal inpatients and reflections of clinical researchers. *Archives of Suicide Research*, *14*, 375–382.

LEIBETSEDER, M. M., ROHRER, R. R., MACKINGER, H. F., & FARTACEK, R. R. (2006). Suicide attempts: Patients with and without an affective disorder show impaired autobiographical memory specificity. *Cognition and Emotion*, *20*, 516–526.

LINEHAN, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York, NY: Guilford.

MANDRUSIAK, M., RUDD, M. D., JOINER, T. E., BERMAN, A. L., VAN ORDEN, K. A., & WITTE, T. (2006). Warning signs for suicide on the internet: A descriptive study. *Suicide and Life-Threatening Behavior*, *36*, 263–271.

MCINTOSH, J. L., & DRAPEAU, C. W. (for the American Association of Suicidology). (2014). *U.S.A. suicide in 2011: Official final data*. Washington, DC: American Association of Suicidology. Retrieved June 19, 2014, from http://www.suicidology.org.

MCSWAIN, S., LESTER, D., & GUNN, J. F. (2012). Warning signs for suicide in internet forums. *Psychological*, *111*, 186–188.

MICHEL, K., DEY, P., STADLER, K., & VALACH, L. (2004). Therapist sensitivity towards emotional life-career issues and the working alliance with suicide attempters. *Archives of Suicide Research*, *8*, 203–213.

MICHEL, K., MALTZBERGER, J. T., JOBES, D. A., LEENAARS, A. A., ORBACH, I., STADLER, K., ET AL. (2002). Discovering the truth in attempted suicide. *American Journal of Psychotherapy*, *56*, 424–437.

MICHEL, K., & VALACH, L. (2011). The narrative interview with the suicidal patient. In K. Michel, & D. A. Jobes (Eds.), *Building a therapeutic alliance with the suicidal patients* (pp. 63–80). Washington, DC: American Psychological Association.

MOŚCICKI, E. K. (1997). Identification of suicide risk factors using epidemiologic studies. *Psychiatric Clinics of North America*, *20*, 499–517.

MURPHY, G. E., WETZEL, R. D., ROBINS, E., & MCEVOY, L. (1992). Multiple risk factors predict suicide in alcoholism. *Archives of General Psychiatry*, *49*, 459–463.

O'CONNOR, R. C. (2011). The integrated motivational-volitional model of suicidal behavior. *Crisis*, *32*, 295–298. doi: 10.1027/0227-5910/a000120

O'CONNOR, R. C., & NOCK, M. K. (2014). The psychology of suicidal behaviour. *The Lancet Psychiatry*, *1*, 73–85.

RIZVI, S. L., & RITSCHEL, L. A. (2014). Mastering the art of chain analysis in dialectical behavior therapy. *Cognitive and Behavioral Practice*, *21*, 335–349. doi:10.1016/j.cbpra.2013.09.002.

ROY, A. (2003). Characteristics of HIV patients who attempt suicide. *Acta Psychiatrica Scandinavica*, *107*, 41–44.

RUDD, M. D. (2000). The suicidal mode: A cognitive-behavioral model of suicidality. *Suicide and Life-Threatening Behavior*, *30*, 18–33.

RUDD, M. D. (2003). Warning signs for suicide? *Suicide and Life-Threatening Behavior*, *33*, 99–100.

RUDD, M. D. (2008). Suicide warning signs in clinical practice. *Current Psychiatry Reports*, *10*, 87–90.

RUDD, M. D., BERMAN, A. L., JOINER, T. E., NOCK, M. K., SILVERMAN, M. M., MANDRUSIAK, M., ET AL. (2006). Warning signs for suicide: Theory, research, and clinical applications. *Suicide and Life-Threatening Behavior*, *36*, 255–262.

SHNEIDMAN, E. (1985). *Definition of suicide* (pp. 202–213.) New York: John Wiley & Sons.

VAN ORDEN, K. A., LYNAM, M. E., HOLLAR, D., & JOINER, T. E. (2006). Perceived burdensomeness as an indicator of suicidal symptoms. *Cognitive Therapy and Research*, *30*, 457–467.

WENZEL, A., & BECK, A. T. (2008). Cognitive model of suicidal behavior: Theory and treatment. *Applied and Preventive Psychology*, *12*, 189–201.

WENZEL, A., BROWN, G. K., & BECK, A. T. (2009). *Cognitive therapy for suicidal patients: Scientific and clinical applications*. Washington, DC: American Psychological Association.

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