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Suicide Risk Assessments: Examining Influences on Clinicians' Professional Judgment

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Professional judgment in complex clinical situations such as the assessment of suicide risk encompasses a multifaceted cognitive understanding of the substantive issues, technical expertise, and emotional awareness. This experimental design study investigated the degree to which the previous work-related experiences of clinicians and their preexisting emotional state influence professional judgment regarding acute risk in patients presenting with suicidal ideation. Experienced social workers and social work students conducted suicide risk assessments on 2 standardized patients performing in scenarios constructed to depict individuals presenting with suicidal ideation. This study revealed significant variations in clinical judgments of practitioners assessing suicide risk. While scores on standardized risk assessment measures were the strongest predictor of judgments regarding the need for hospitalization to ensure the safety of the patient, other influences included clinician age and levels of posttraumatic stress symptoms. Mental health clinicians and organizations that employ them should be aware of possible individual influences on professional judgments related to suicide risk.

In the fall of 2014, the World Health Organization released its first report on suicide entitled "Preventing Suicide: A Global Imperative" (World Health Organization, 2014). The report identifies that suicide takes the lives of 800,000 people each year; that suicides are preventable but require comprehensive, multisectoral strategies; that suicide prevention must be a core element of health care services; and that communities have a critical role to play in suicide prevention. Yet health care and community services are in large part failing in their duties to assess and prevent suicide. Research reveals that the majority of people who take their own lives have contact with health care and mental health professionals shortly before their deaths. For instance, an Australian study using coroner's data revealed that 79% of people had contact with health care professionals in the 3 months before their deaths by suicide (Draper et al., 2008). A review of 40 studies by Luoma et al. (2002) determined that on average 45% of suicide victims had contact with health care providers 1 month prior to their deaths and 20% had contact with mental health professionals in the month prior to death. Suicide risk assessment is a critical component of the practice of all mental health practitioners, yet our ability to predict risk remains sadly lacking. This study seeks to better understand clinical decision making in the area of suicide risk.

Scholars have identified that professional judgment in complex clinical situations such as the assessment of suicide risk encompasses a multifaceted cognitive understanding of the substantive issues, technical expertise, and emotional awareness (Epstein, Siegel, & Silberman, 2008; Eraut, 1994; Schön, 1987). Experts reflect on previous experiences and selectively apply this knowledge to the problem at hand (Cheetham & Chivers, 2005; Ruch, 2002), actively using critical thinking and tacit knowledge to find creative solutions (Cheetham & Chivers, 1998; Eraut, 2002; Schön, 1983, 1987). Indeed, despite a recent emphasis on evidence-based practice (Regehr, Stern, & Shlonsky, 2007), professionals continue to rely primarily on tacit knowledge consisting of their own experience, professional values and consultations with colleagues (McLaughlin, Rothery, Babins-Wagner, & Schleifer, 2010). However, in the area of suicide risk, expertise alone has been proven to be a remarkably inaccurate predictor. A study examining professional judgments of suicide risk determined that participating psychiatrists and nurses had ratings of risk that ranged from 25–100% for a single case scenario. Also concerning in this study was that 42% of psychiatrists and 78% of nurses had

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significantly different ratings of risk on the same case scenario at different time periods (Paterson et al., 2008).

In all forms of risk assessment, controversy exists regarding the relative value of clinical assessments based on expertise and standardized, evidence-based risk assessment measures based on actuarial data (Camasso & Jagannathan, 2000; Glancy & Regehr, 2004; Lyons, Doueck, & Wodarski, 1996; Shlonsky & Wagner, 2005; Sreenivasan, Kirkish, Garrick, Weinberger, & Phenix, 2000; Zonana, 1999). A range of studies have compared a variety of risk assessment scales to clinical assessments of clients with suicidal ideation (Bisconer & Gross, 2007; Cochrane-Brink, Lofchy, & Sakinofsky, 2000). However, while scales are important adjuncts to clinical assessment, no scale reliably predicts whether clients will ultimately die of suicide (Harriss & Hawton, 2005). Suicide risk assessment must take into account unique and distinctive patient risk and protective factors for which no evidence base exists (Simon, 2006). Consequently, clinical judgment remains a critical component of any assessment of suicide risk, even when augmented with actuarial tools.

The present study hypothesized that differences in professional judgment occur as a result of the interaction between clinician factors and context factors. One set of factors may involve previous professional experiences, such as traumatic exposures in the course of mental health practice that may potentially affect performance and judgment with respect to suicide risk. For instance, surveys suggest that approximately 1/4 to 1/3 of social workers report being assaulted at some time in their careers and approximately 1/2 to 3/4 have been threatened with physical harm (Macdonald & Sirotich, 2001, 2005; Newhill, 1995; Regehr, Hemsworth, Leslie, Howe, & Chau, 2004; Rey, 1996). Victimization in the workplace has profound effects on workers, negatively affecting performance (Mahoney, 1991).

A second form of trauma exposure in mental health professionals relates to working with highly distressed individuals. Several quantitative studies point to elevated rates of trauma symptoms in practitioners providing services to traumatized individuals (Arvay & Uhlemann, 1996; Bober & Regehr, 2006; Brady, Guy, Poelstra, & Brokaw, 1999; Gates & Gillespie, 2008; Ortlepp & Friedman, 2002; Schauben & Frazier, 1995). In addition, losing a patient to suicide is an experience many clinicians share (Palmieri et al., 2008; Ting, Jacobson, & Sanders, 2008). Indeed, 33% of mental health social workers report having lost a patient to suicide (Sanders, Jacobson, & Ting, 2008). This experience has been found to undermine a sense of professional competence, cause acute stress and grief reactions, and lead to burnout (Gaffney et al., 2009; Linke, Wojciak, & Day, 2002).

Job burnout is now one of the most frequently studied concepts in organizational and employment research in all occupational domains (Acker, 1999; Lloyd, King, & Chenoweth, 2002; Swider & Zimmerman, 2010; Van Hook & Rothenberg, 2009). Burnout is a multidimensional construct involving emotional exhaustion, depersonalization and personal accomplishment (Maslach & Jackson, 1981). Burnout has been linked to absenteeism, job turnover (Swider & Zimmerman, 2010; Travis, Lizano, & Mor Barak, 2015), and lower levels of perceived competence (Acker & Lawrence, 2009). It is interesting, however, that the association between burnout and job performance is less conclusive (J. Beck, Gerber, Brand, Pühse, & Holsboer-Trachsler, 2013), with some research suggesting it is unequivocally associated with poorer performance (Diestel, Cosmar, & Schmidt, 2013) and other research suggesting the association is weak at best (Demerouti, Bakker, & Leiter, 2014).

Given that suicide risk assessment is a frequent and high stakes component in the provision of mental health care, it is critical that we better understand elements of professional decision making to improve patient safety. This experimental design study investigated the degree to which the previous work-related experiences of social workers and their preexisting emotional state including symptoms of stress, posttraumatic stress, and burnout influence professional judgment regarding acute risk in patients presenting with suicidal ideation.

Method

This experimental design study utilized standardized patients performing in scenarios constructed to depict individuals presenting with suicidal ideation. The research protocol was approved by the Research with Human Subjects Ethics Board of the University of Toronto and the project was funded by the Social Sciences and Humanities Research Council of Canada. Written consent was obtained from all participants.

Seventy-one people participated in this study, 37 final-year Master of Social Work (MSW) at the University of Toronto students who were specializing in mental health (52.1%) and 34 experienced social workers primarily employed in inpatient and outpatient departments of large mental health facilities in three different cities (47.9%). Eighty-two percent of the participants were women, which is consistent with the overall gender distribution of social workers (Regehr, 2013). The age range of participants was 21 to 78. The mean age of experienced social workers was 42.50 (*SD* 13.56) and the mean age of MSW students was 27.43 (*SD* 5.29). The experienced social workers were more likely to be married or in a common-law relationship (64.7%) than students (32.4%). Experienced social workers had a mean of 12.90 years of experience (*SD* 12.40), MSW students had a mean of 0.61 years of experience (*SD* 1.79). In terms of level of education, 94.1% (32) of the experienced social workers had an MSW, one person had a BSW and one had a PhD. One of the MSW students had a PhD in another field, 41.70% had a university degree in another field and 50.0% had a BSW prior to entering their current program.

Baseline Measures

Participants completed a series of questionnaires aimed at understanding their previous history of traumatic exposure in the workplace, and current emotional state including current level of symptoms of traumatic stress and burnout. Demographic information was obtained through a short questionnaire assessing age, gender, marital status, years of experience, professional education and training, and prior exposure to traumatic events in the workplace.

Trauma symptoms were assessed by the Impact of Event Scale–Revised (IES–R; Weiss & Marmar, 1997), which assesses posttraumatic stress symptoms for any specific life event. The severe range has been found in other studies to have symptoms at a level equivalent to a diagnosis of PTSD. Scores on this scale have high

internal consistency (Cronbach's alpha ≥ .86) and test–retest reliability of .87.

Burnout was measured using the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981), which assesses three components of burnout, emotional exhaustion, depersonalization, and lack of personal accomplishment. This scale has been used by over 90% of reported studies on burnout and has excellent reported reliability and validity of scores in a variety of populations (Schaufeli, Bakker, Hoogduin, Schaap, & Kladler, 2001).

Stress was measured by the Perceived Stress Scale–10 (PSS–10), which is a 10-item scale addressing three components of stressful experiences: unpredictability, uncontrollability, and overloading (Cohen & Williamson, 1988). Alpha coefficients in a sample of 285 college students ranged from .82 to .89. Reported mean scores in the college student sample were 17.4 (*SD* 6.1) for men and 18.4 (*SD* 6.5) for women; this difference was not statistically significant (Roberti, Harrington, & Storch, 2006).

Simulated Suicide Risk Assessment

Participants were asked to assess two simulated patients, portrayed by standardized patients, presenting with suicidal ideation. Through random assignment, half the participants interviewed one client first and the other half interviewed the other client first to control for order effects. Workers were required to interact with the standardized patient, gather information through a clinical interview, and make a determination of suicide risk.

The Standardized Patient Program at the University of Toronto was established 25 years ago following the model developed in the 1960s by Barrows. The use of standardized patients ensures consistency in patient presentation allowing for comprehensive assessment of clinical competence (Barrows, 1993). Standardized patients are healthy individuals trained to portray the personal history, physical symptoms, emotional characteristics, and everyday concerns of actual patients. While they are trained to give consistent information and maintain a consistent level of emotional intensity and engagement, the nature and quantity of information they provide is dependent on the questions posed by the interviewer.

Each scenario was of 15 min duration and recreated a credible client encounter. One client was an adolescent/young adult (Karolina) presenting with a situational crisis, and the second was a depressed middle-aged woman (Margaret), who is a victim of intimate partner violence. The scenarios were pilot tested with a cross-section of social workers to ensure that they were experienced as realistic client encounters. Researchers have previously demonstrated that this type of design can successfully replicate stressful workplace encounters in studies with child welfare workers (Regehr, LeBlanc, Shlonsky, & Bogo, 2010), paramedics (LeBlanc et al., 2012), medical residents (Harvey, Bandiera, Nathens, & LeBlanc, 2012), and police officers (LeBlanc, Regehr, Jelley, & Barath, 2008; Regehr, LeBlanc, Jelley, & Barath, 2008).

Appraisal of Suicide Risk

At the end of each scenario, participants were asked to determine whether or not the client required hospitalization because of imminent risk of suicide. Participants then completed three standardized suicide risk assessment measures, the Beck Scale for Suicide Ideation, the Hamilton Rating Scale for Depression, and the Columbia-Suicide Severity Rating Scale. Thus, the standardized measures were not used as clinical guides in this study but were rather used to assess factors that workers included in their judgment.

The Beck Scale for Suicidal Ideation (BSS) is a 21-item scale designed to assess a person's thoughts, plan, and intent to commit suicide (A. Beck & Steer, 1991). Studies comparing risk assessment scales to clinical assessments of clients with suicidal ideation have suggested the BSS has greatest accuracy (Cochrane-Brink et al., 2000).

The Hamilton Rating Scale (HRS) for Depression (Hamilton, 1960) is the most widely used clinician-administered measure of depression. The scale has shown good indications of valid and reliable scores in a variety of populations with internal reliability and interrater reliability ranging from 0.82–0.98; test–retest reliability ranges from 0.81–0.98 (Bagby, Ryder, Schuller, & Marshall, 2004).

The Columbia-Suicide Severity Rating Scale (C-SSRC) quantifies four aspects of suicide risk: severity of ideation, intensity of ideation, previous suicidal behavior, and lethality of attempts. Scores on the scale have been demonstrated to have good convergent and divergent validity with scores on other suicide scales as well as good predictive validity and sensitivity to change (Posner et al., 2011).

Results

Prior Exposure to Workplace Trauma and Symptoms of Distress

Respondents were asked to indicate whether they had encountered any of a list of events and whether they experienced "emotional distress" as a result of exposure to the event(s). Thirty-one percent of participants indicated that they had worked with a patient who committed suicide (52.9% of experienced workers and 10.8% of students); 20% had been assaulted by a patient; 47.1% had been threatened with violence; 65.7% had colleagues that had been threatened by a patient; and 23.9% worked with patients who had inflicted severe injuries on others. A total of 73.2% of respondents indicated that they had experienced at least one work-related critical incident (82.4% of experienced workers and 64.9% of students). Of those who did experience a work-related incident, 53.8% indicated that they experienced emotional distress as a result of the exposure (60.1% of exposed workers and 45.8% of exposed MSW students). These high rates of reported exposure to critical events are consistent with previous research on child welfare workers (Regehr et al., 2010; Regehr, Leslie, Howe, & Chau, 2005).

T test analyses were conducted to examine possible differences between experienced social workers and students on the standardized measures. Although students reported higher levels of symptoms, there was no significant difference between the scores of experienced social workers and students on the measures of stress, burnout, or posttraumatic stress. As a result, samples were combined in further analyses.

Scores on the Perceived Stress Scale were significantly lower ($t = 3.63$, $p \leq .001$) in the present study group than reported means for college students (Roberti et al., 2006). With respect to burnout, scores on the personal accomplishment scale of the Maslach's Burnout were significantly less favorable in this sample

than in samples of registered nurses ($t = 7.96$, $p \leq .001$) and when compared to published norms ($t = 7.77$, $p \leq .001$). However, the present group reported less emotional exhaustion than registered nurses ($t = 6.84$, $p \leq .001$) and published norms ($t = 12.81$, $p \leq .001$). Scores on the depersonalization scale were not significantly different than published norms (Beckstead, 2002; see Table 1).

Twenty-five individuals (35.2%) scored in the high or severe range of the IES-R scale. Of these, 16 (22.5%) fell in the severe range, which is considered consistent with a clinical picture of PTSD. Scores on the Impact of Event Scale were not significantly different than those reported in studies of social workers in child welfare settings (Regehr et al., 2004).

Assessment of Risk

There was considerable variability in participants' assessment of suicidal risk for the two simulated patients. Seventy percent of participants believed that the adolescent patient in acute crisis (Karolina) did not require hospitalization as a result of suicide risk, while 30% believed that she should be hospitalized. Similarly, 62.9% of participants believed that the depressed middle-aged woman (Margaret) should be hospitalized whereas 37.1% believed she did not require hospitalization. MSW students were significantly less likely to believe that Karolina required hospitalization ($\phi = -0.318$, $p \leq .01$). There was no significant association between believing that Karolina required hospitalization and believing that Margaret required hospitalization. Further, there was no significant association with previously encountering a patient suicide and judgment regarding the need for hospitalization.

Professional judgment that Karolina should be hospitalized versus not hospitalized was associated with four factors in T test analyses: the age of the respondent ($t = -2.75$, $p \leq .001$), scores on the Beck Suicide Scale ($t = 5.45$, $p \leq .001$), scores on the Hamilton Rating Scale for Depression ($t = -2.72$, $p \leq .01$), and scores on the Columbia-Suicide Severity Rating Scale ($t = 2.95$, $t \leq 0.01$) (see Table 2). That is, in addition to the association between scores on the suicide scales and judgment that hospitalization was necessary, younger respondents were less likely to believe that the adolescent patient required hospitalization. Logistic regression analysis revealed that only two factors were significantly associated with the judgment that Karolina required hospitalization when the influence of other factors was taken into account: the BSS, which independently accounted for 47% of the variance ($\beta = .24$, $p \leq .001$), and age of respondent, which accounted for an additional 8% of the variance ($\beta = .06$, $p \leq .05$).

Table 2. *Correlational Matrix Between Measures of Personal Distress and Risk Assessment Tools for Karolina*

	BSS	HRS	C-SSRS	PSS	IES-R	MBI-PA	MBI-EE	MBI-D
BSS	1	.57**	.57**	−.06	−.11	.08	.10	.07
HRS		1	.35**	.15	.00	.00	.10	.11
C-SSRS			1	−.13	−.32**	.19	.14	.02
PSS				1	.52**	−.44**	.43**	.27*
IES-R					1	−.25*	.26*	.30*
MBI-PA						1	−.53**	−.54**
MBI-EE							1	.60**

Note. BSS = Beck Scale for Suicidal Ideation; HRS = Hamilton Rating Scale; C-SSRS = Columbia-Suicide Severity Rating Scale; PSS = Perceived Stress Scale; IES-R = Impact of Event Scale-Revised; MBI = Maslach's Burnout Inventory.
* $p \leq .01$. ** $p \leq .001$.

Professional judgment that Margaret should be hospitalized was associated with only one factor in T test analyses: scores on the Beck Suicide Scale ($t = -3.50$, $p \leq .001$) (see Table 3). That is, higher scores on the BSS were associated with a judgment that hospitalization was necessary. In a logistic regression analysis, the BSS accounted for 24% of the variance ($\beta = 0\ .13$, $p \leq .05$).

The three measures of patient risk—the Beck Suicide Scale, the Hamilton Rating Scale for Depression, and the Columbia-Suicide Severity Rating Scale—were significantly associated with one another in correlational analyses ($r = 0\ .41$ to $r = .52$, $p \leq .001$). In addition, however, scores on the Impact of Event Scale were significantly negatively associated with scores on the BSS ($r = -0.24$, $p \leq .05$), and C-SSRS ($r = -0.25$, $p \leq .05$) for Margaret and with the C-SSRS for Karolina ($r = -0.32$, $p \leq .01$). That is, individuals with higher levels of posttraumatic stress symptoms rated patients as at lower risk of suicide. There was no significant association between measures of patient risk and worker burnout (MBI) or perceived stress (PSS).

Discussion

The present study used an experimental design to simulate lifelike clinical situations involving patients with potential suicide

Table 1. *Scores on Measures of Personal Distress*

Variable	Mean score for experienced workers	Mean score for students	Mean score for total sample
Maslach's Burnout Inventory			
Personal accomplishment	30.47 (*SD* 5.03)	28.29 (*SD* 5.27)	29.65 (*SD* 5.18)
Emotional exhaustion	12.23 (*SD* 7.97)	13.78 (*SD* 5.68)	13.03 (*SD* 6.88)
Depersonalization	7.12 (*SD* 6.80)	6.19 (*SD* 4.75)	6.63 (*SD* 5.80)
Perceived Stress Scale	14.30 (*SD* 5.35)	16.14 (*SD* 6.02)	15.27 (*SD* 5.75)
Impact of Event Scale			
Intrusion	6.24 (*SD* 5.36)	7.65 (*SD* 6.53)	6.97 (*SD* 6.00)
Arousal	2.18 (*SD* 2.24)	3.78 (*SD* 4.45)	3.01 (*SD* 3.64)
Avoidance	4.47 (*SD* 4.88)	6.43 (6.14)	5.49 (*SD* 5.62)
Total	12.88 (10.56)	17.86 (*SD* 15.85)	15.48 (*SD* 13.72)

Table 3. *Correlational Matrix Between Measures of Personal Distress and Risk Assessment Tools for Margaret*

	BSS	HRS	C-SSRS	PSS	IES-R	MBI-PA	MBI-EE	MBI-D
BSS	1	.41**	.54**	.09	−.24*	.14	−.23	−.02
HRS		1	.45**	.02	−.11	.18	.08	.00
C-SSRS			1	−.01	−.25*	.16	.08	−.09
PSS				1	.52**	−.44**	.43**	.27*
IES-R					1	−.25*	.26*	.30*
MBI-PA						1	−.53**	−.54**
MBI-EE							1	.60**

Note. BSS = Beck Scale for Suicidal Ideation; HRS = Hamilton Rating Scale; C-SSRS = Columbia-Suicide Severity Rating Scale; PSS = Perceived Stress Scale; IES-R = Impact of Event Scale-Revised; MBI = Maslach's Burnout Inventory.
* $p \leq .01$. ** $p \leq .001$.

risk. Results revealed considerable variability in clinical decision making, with approximately one third of participants judging that the adolescent should be hospitalized and two thirds judging that the chronically depressed woman should be hospitalized. This variability is consistent with that found in previous research (Paterson et al., 2008). The strongest predictors of clinical judgment regarding the need for hospitalization were scores on the Beck Suicide Scale and Columbia-Suicide Severity Rating Scale, suggesting that these measures are predictive of clinical decision making. This is heartening and demonstrates that clinical decision making was primarily based on well-known clinical indicators.

Nevertheless, some personal factors were associated with clinical decision making, specifically age of the social worker and level of posttraumatic stress symptoms. In the case of Karolina, the adolescent in crisis, younger workers were significantly less likely to view that she required hospitalization. It would seem that workers closer in age to this patient were more likely to contextualize situational distress of an adolescent and see it as within the realm of normative behavior that would resolve without hospital intervention.

In both simulated clinical cases, higher levels of posttraumatic stress in the social workers as measured by scores on the Impact of Event Scale–Revised were associated with lower assessed suicide risk as measured by scores on the Beck Suicide Scale for the chronically depressed patient, and lower scores on the Columbia-Suicide Severity Rating Scale for both patients. This finding replicates that of an earlier study with child welfare social workers in which increased levels of posttraumatic symptoms reduced the likelihood that a worker would determine that a child was at risk of abuse (Regehr et al., 2010).

Researchers have found that individuals' subjective emotions shape cognitive processes including perception, attention, and memory. Emotional arousal narrows and focuses attention, reducing the number of cues to which the individual attends (LeBlanc, McConnell, & Monteiro, 2015). Studies of clinical decision making have found that individuals in more positive mood states are more thorough in their clinical investigations, considering a wider range of diagnoses and treatments, while individuals with negative mood states are not only less likely to consider a wide range of information, but they are also more likely to take risks (LeBlanc et al., 2015). As previous investigations have focused on current and potentially transient emotional reactions, longer term states such as PTSD may have particular effects on clinical decision making that should be explored further. In the case of the present study, it is possible that workers with higher levels of traumatic stress symptoms were less likely to ask questions that would elicit information about suicidal thoughts from patients or less likely to attend to clinical cues, and therefore made assumptions that risk is lower. It is also possible that they had higher risk tolerance.

On the other hand, burnout was not associated with assessment of suicide risk in this study. Previous research has suggested that burnout is associated with impairments of executive functioning, defined as the ability to regulate cognitive functioning to manage novel and challenging situations (Diestel et al., 2013). This would seem to be a significant risk in such complex tasks as evaluating suicide risk. However, cognitive deficits have been found to be related primarily to the emotional exhaustion component of burnout, which was a less significant problem in the present study population than in other reported samples, including normative populations (Beckstead, 2002). Further, where emotional exhaustion is in evidence, studies suggest that sufficiently aware individuals can overcome the negative effects on cognitive functioning through compensatory behaviors (J. Beck et al., 2013; Demerouti et al., 2014).

Limitations

This study has a number of limitations that may influence the findings. In the first place, the study has relied on lifelike clinical situations that may not accurately reflect real-life clinical encounters. Further, given the time constraints of the study, clinical interviews were abbreviated to 15 min and other information that may have been collected in a lengthier interview may not have been available to workers. Nevertheless, despite the limited timeframe, many workers were able to confidently come to a conclusion regarding the client's level of risk. This is consistent with decision-making theory and research in which clinicians have been found to form judgments early in the assessment process that are then confirmed by selective attention to subsequent information (Arkes, 1981; Baumann, Deber, & Thompson, 1991; Gambrill & Shlonsky, 2000; Smith & Dumont, 2002). In this way, previous experiences sway current judgments.

Conclusions

This study revealed significant variations in clinical judgments of social workers assessing suicide risk. While scores on standardized risk assessment measures were the strongest predictor of judgments regarding the need for hospitalization to ensure the safety of the patient, other influences included clinician age and levels of posttraumatic stress symptoms. These findings have important implications for the assessment of suicide risk by clinicians. First, it is imperative that clinicians are aware that judgments may be influenced by personal factors and appropriately seek consultation on important decisions related to suicide risk. Second, organizations responsible for mental health services need to ensure that supports are in place for workers who encounter traumatic events in the course of their practice, and that these supports should include education regarding the possible impact of traumatic stress reactions on their work. Finally, it is vital that continued research be conducted on reliability and validity

of risk assessment measures in clinical situations to more fully understand worker factors that may influence their use of standardized measures.

Keywords: stress; burnout; trauma; suicide; risk assessment

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