Perspective

Scales vs. Tales: Teaching Suicide Assessment in the Age of Algorithms

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INTRODUCTION

We can all agree trainees should try to identify and protect patients at risk of suicide as suicidal thoughts can reflect a treatable, underlying illness. Failure to prevent suicide can also carry complicated issues of blame not as evident in medical fields that use evidence based treatment algorithms. Particularly horrifying are incidences of murder/suicide, e.g. Columbine, Sandy Hook, Virginia Tech, which dramatize how one person's illness can precipitate emotional damage on a massive scale. After such tragedies people inevitably ask whether there were warning signs or opportunities to intervene. The question for educators is: what do we teach trainees about their role in prevention in the absence of accurate, proven predictors of a potentially deadly, but low probability outcome?

Background

In the mid 1990's, grass roots efforts by family members who lost loved ones to suicide prompted congressional resolutions making suicide prevention a national priority. Suicide prevention programs and major investments in research have yielded increased community support and identification of at risk groups. There are now over 30 assessment scales and established risk/protective factors identified in efforts to provide objective, evidence driven methods for identifying suicide risk [1,2]. Their high sensitivity supports potential use as screening tools, particularly in settings where mental health assessment might be limited, ie. schools, primary care clinics, emergency department triage areas. Unfortunately, their low specificity and predictive value hampers their use as objective clinical measures for mental health workers evaluating suicidal patients [2-5]. Despite these limitations, research efforts provide professional consensus on the information clinicians should collect from patient interviews and appropriate nomenclature to describe their findings [6]. Several professional guidelines, including those from the Centers for Disease Control, American Psychiatric Association, and Veterans Administration provide standardized approaches to suicide assessment that incorporate many of the risk/protective factors identified through research, as well as suggested approaches to elicit this information [6-9]. Teaching trainees to conduct patient interviews following these guidelines ensures consistency in their suicide assessments. However, integration of the assessment into clinical practice can have unexpected consequences without education regarding a suicide formulation.

A Vignette

Psychiatry residents in one of our hospitals began documenting evaluations of suicidal patients with two lists marked "risk factors" and "protective factors." These factors were then entered into a mathematical calculation to output suicide risk as low, moderate or high based on the final numeric value. Unfortunately, this calculation sometimes led to contradictory documentation in which the patient's final disposition failed to match the calculated risk. The residents admitted they would not discharge someone with an arithmetically low risk score if they believed clinically the patient posed a suicide risk but needed further instruction how to reconcile the discrepancy between their interview and clinical decision-making. Their arithmetic failed, in part, because their lists assigned equal weight to each factor. But even scales that allow a range of weights/values often fail to correlate with future behavior [10]. This attempt to translate probability data based on group risk to individual behavior ignores professional judgment and patient specific factors potentially not captured in epidemiologic research.

Routine medical practice is full of screening algorithms that, unlike suicide risk, rely on factors with concrete values (ie. number of cells, percent of organ affected). Yet disease staging in any medical field offers, at best, only probabilities for particular outcomes. Treatment choices are often based on abstract factors: subjective input from the patient, experience of the provider and availability of treatment center resources. Therefore, integration of evidence-based research with clinical judgment is intrinsic to education of medical trainees. It is ironic that in psychiatry, which historically emphasized attention to the patient's story, trainees would instead use an ordinal scale for the evaluation of suicidal impulses. Yet it reflects the challenge psychiatric clinicians face trying to quantify and predict future actions, and echoes an old debate over theories of behavior.

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Scales and the Behaviorists

Before the twentieth century, hypotheses to explain human behavior remained primarily the purview of philosophers. With the advent of experimental psychology, the scholars B.F. Skinner and Noam Chomsky represented opposing views in the debate around the reproducibility of behaviors. B.F. Skinner proposed that a known set of inputs could reliably produce a particular behavior by an organism; this is essentially the model of behavior assumed when using scales/risk factors to assess suicide risk. Chomsky countered that even if all inputs over the lifetime of an organism are identical, differences in its internal state means inputs may not be processed identically leading to variability in behavioral responses [11]. Although this was likely not Chomsky's intent, internal state could encompass the emotional weight patients assign to the factors affecting their decisions. Asking patients whether they want to die, what has stopped them from making a suicide attempt and what motivates them to keep living can help provide insight into this internal processing.

Technologies such as genetic testing and advanced imaging offer new means to assess this processing, promising better detection and individualized treatment for a range of medical conditions including mental health disorders. One review posits that such a combination could identify patients vulnerable to suicide [12]. Assuming these techniques become widely available, should we advise trainees to use them? All clinicians are taught to weigh their use of tests and treatments as sometimes the risks or costs imposed outweigh a low chance for a positive outcome. Additionally, government or insurance restrictions may affect clinical decisions. Luckily, the timescale for progression of many illnesses allows clinicians to consider individual risk factors and preferences, and interventions not chosen early in clinical care can be reconsidered later. The rapidity of suicide collapses this timeline so that assessment and intervention occur simultaneously. The immediacy imposed on making a clinical decision also can contribute to the anxiety many trainees experience working with suicidal patients.

Quantitative assessment likely appealed to our trainees because it offered the semblance of an evidenced based, objective measure. Reconciling the conflict between pressure to reduce suicide and our limited ability to affect this outcome [13,14] can precipitate clinician behavior that reduces their own anxiety without benefiting the patient [15,16]. Perhaps teaching suicide assessment should include open discussion of its limitations. It might also include discussion of social and professional pressures to predict individual violent behavior. Teaching suicide assessment could include grappling with these expectations in addition to teaching professional and legal standards of practice.

Tales: The Patient's Story

Basic data collection included in these standards (ie. past medical and psychiatric history, family history, review of symptoms, substance use) usually poses little problem to our trainees. However, assessment of hopelessness, cognitive style, and other dynamic factors used to formulate risk typically requires interpretation, which can be daunting for trainees with limited experience or confidence. We could teach trainees to elicit the patient's story because a narrative reveals consistencies/inconsistencies that shape our clinical judgment, elicits the meaning of pertinent factors specific for each patient and can foster a therapeutic relationship that might benefit treatment, as well as assessment.

A patient's story should, ideally, begin with the information the patient feels is most acutely relevant, and is often prompted by a vague opening question. A clinician may interrupt at some point to gather pertinent data; however interviews focused on gathering facts often devolve into a series of questions redirecting the patient from topic to topic. As described in a discussion of narrative medicine, "Biomedicine has become paltry, limited, conceptually cramped…The poverty of (modern) medicine is in the dimensions of the figural, the connotative, the meaningful." [17]. By adding questions that query motives, attachments, resilience, and coping mechanisms (Table 1), the clinician may gain insight into a patient's ability to tolerate emotional pain, which in turn informs formulation of suicide risk. Additionally, such questions can reveal patient specific feelings that may change interpretation of particular risk factors. For example, research studies identify suicide by a family member as a risk factor, but it might be protective for a patient who viewed the suicide as selfish and destructive to their family. Trainees are unlikely to learn this if their interview is limited to asking whether or not factors are present. Asking patients to reflect on their answers starts a potentially therapeutic conversation as it expands the doctor-patient relationship beyond that of technician-symptom list and recaptures what has variously been described as an empathic or holistic approach.

An interview focused on the patient's story will also change trainees' approach to documentation: how they understood a patient's risk, how much of the risk was chronic or acute, and whether there were protective factors, if any. Using this formulation, they can articulate a plan for immediate safety management and long-term intervention [9]. This may include hospitalization. However outpatient management may also be appropriate with suicide prevention measures (ie. limit access to lethal means, treatment enrollment) [18]. These decisions necessarily involve patient collaboration and often include input from their friends/family or treaters.

When complete, this evaluation should contain all pertinent data [7], a narrative that reveals ambivalence or inconsistencies, and behaviors or attachments that inform risk. Interventions should be supported by description of the clinician's concerns, in alignment with, or weighed against those of the patient and collateral sources. Sometimes outcome cannot be predicted or prognosis is poor. Like other potentially lethal disorders, a poor prognosis could shift clinician attention to education and preparation of family or friends who may be left grieving. Scales, neuroimaging and other test results will not help this process. But learning a patient's story might expose the wishes, attachments, and regrets that can make patient care more effective.

Table 1: Factors Associated with Increased Suicide Risk and Suggested Queries.

Risk Factors	Data	Questions to Expand Narrative
Psychiatric or physical illness	Illness severity	What problems has illness caused? What are expectations for future?
Demographic/Psychosocial: age, sex, marital status, work, relationships	Present or absent, sources of collateral, protective factors	Who are your supports? Are those relationships stable? What do you do for fun? What makes you proud/like about yourself? What do you feel is missing?
Suicide: thoughts, behaviors	Present or absent	How plan to carry out attempt? Acts in furtherance of attempt? What stops you from making an attempt? How did you feel about surviving attempt? What keeps you going?
Family history of suicide	Genetic or Dynamic factors present	How did that affect you? How did that affect opinion of suicide?
Dynamic factors: trauma, hopelessness, anxiety, shame, behavioral dyscontrol	Illness severity, level of function, coping mechanisms, resilience	Has your self-esteem been affected? Do you deserve to get better? How do these behaviors affect your relationships, work, or living situation?
	Illness severity or	How does the patient weigh information? Is thinking concrete, impaired, or overished?

ith suicide as summarized in the APA Practice Guidelines for the Assessment and Treatment of Suicidal Behavior (6A). Column "Data" shows information provided by asking whether or not Risk Factor is present. "Questions to Expand Narrative" has suggested interview questions or focus for questions to elicit patient specific processing of risk factors.

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Cite this article

Chepenik LG (2018) Scales vs. Tales: Teaching Suicide Assessment in the Age of Algorithms. Ann Psychiatry Ment Health 6(1): 1124.