



Development of a Subtle Screening for Suicidal Ideation: Psychometric Characteristics and Implications for Family Therapists

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Abstract

While 10 million U.S. adults experience suicidal thoughts and 1.7 million attempt suicide annually, candid, truthful endorsement of assessment items related to suicidal ideation (SI) can be inhibited by stigma, shame, and embarrassment and a fear of involuntary hospitalization. Suicidal ideation in, and suicide attempts by, family members increase the suicide risk among other members by several times, and so accurate detection of SI is crucial for couple and family therapists. To address concerns about stigma and false negatives in screening for SI, a 19-item *subtle* screening of suicidal ideation (SSSI) was developed from a pool of 32 “proxy” items tapping psychological pain, emotional intelligence, and negative alterations in mood and cognitions. A demographics form, a measure of suicidal ideation, measures of anxiety, depression, and traumatic stress, and versions of the Beck Hopelessness Scale and the Interpersonal Needs Questionnaire were also used for data collection. Principal components analysis and reliability, correlation, and multiple regression procedures on data from a non-random, diverse sample of adults ($N = 306$) provided evidence of excellent reliability ($\alpha = .93$) and convergent and discriminant validity for the SSSI. The three-dimensional SSSI accounted for 54.9% of the variance in a direct measure of suicidal thoughts, and a Receiver Operator Characteristic curve identified a cut-off score of 35 with a sensitivity of .937 and specificity of .81, indicating the instrument successfully identifies those with and without suicidal thoughts. Clinical implications and future research are discussed.

Keywords Suicidal ideation · Screening · Reliability · Validity · Assessment · Scale · Nondisclosure

Introduction

Couple and family therapists, as well as experts in assessment, acknowledge the challenges involved in obtaining frank, truthful answers to questions of a highly sensitive nature (Charles & Dattalo, 2018). How does one best go about assessing sensitive phenomena that can be associated with guilt, shame, or embarrassment? Political psychologist Marc Hetherington asserted, “There are certain things that you just can't ask people directly. You can't ask people, 'Do you not like black people?' You can't ask people if they're bigots” (Taub, 2016). While card-carrying members of a white nationalist group might enthusiastically endorse items tapping white supremacist, racist, and xenophobic views, most of the population is unlikely to do so due to socially

desirable responding. However, there are “proxy” means to tap such attitudes and feelings, such as asking about their views on interracial couples or the rapidly rising numbers of multiracial children in the country. Another sensitive topic is *suicide* (Thoen et al., 2020). Many persons who struggle with suicidal thoughts may not be comfortable—due to stigmatization and accompanying feelings of guilt or shame—endorsing the item “Do you have thoughts of ending your life?” They are more likely to endorse *proxy* items highly correlated with suicidal ideation (SI). When conducting psychological triage and assessment (Bennett, 2018), systemic therapists and behavior health professionals may have concerns about “false negatives” and failures to detect SI due to clients’ discomfort with disclosing thoughts of suicide. This article reports the development of a *subtle* screening for SI that identifies a high percentage of those with suicidal thought without directly asking about participants’ intentions to end their lives.

There is a place for individual screening devices in the field of couple and family therapy to aid clinical assessment

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(Piercy, 2022), and questionnaires can be conversational tools that bolster family therapy practice (Rober & Van Tricht, 2023). When a family member scores above a clinical cut-off on a subtle screening for suicidal ideation, therapists can initiate important family conversations and mobilize crucial resources toward a family support plan. The goal of this study is to develop a means to mitigate internalized stigma around suicidal ideation via its accurate, indirect assessment. The psychometric characteristics of this subtle screening, a clinical cut-off score, and implications for therapists are presented.

Review of the Literature

Suicide is a serious, global public health problem (Sander et al., 2023). In the U.S. in the past year, 1.7 million adults attempted suicide, and 9.3 million adults had suicidal thoughts (Centers for Disease Control and Prevention [CDC], 2022). Suicide is the second leading cause of death for persons 18–34 years of age, the seventh leading cause of death for males, and the 14th leading cause for females (CDC, 2022). Suicide rates have risen over the past decade, increasing from 11.75 deaths per 100,000 individuals in 2009 to 14.21 deaths per 100,000 in 2020 (American Foundation for Suicide Prevention, 2021). For every death by suicide, there are an estimated 25 nonfatal attempts in adults and 100–200 attempts in youth (Drapeau & McIntosh, 2020), and 54% of those dying by suicide had no known mental health condition (CDC, 2022).

The Need for a Subtle Screening of Suicidal Ideation

While many clients disclose a great deal to helping professionals, including intimate (e.g., sexual) and illicit activities (e.g., buying, selling, and using controlled substances), concealment does happen in therapy (Baumann & Hill, 2016). Farber et al. (2019) found that nondisclosure of significant facts, such as suicidal thoughts, occurs frequently and across multiple topics, settings (clinics, hospitals, and private practices), and therapeutic orientations. Farber et al. (2019) found that 93% of a sample of over 500 clients in therapy admitted to having lied to their therapist, and the mean number of topics that they reported lying about was 8.4. In another study, 84% of nearly 800 respondents reported there was a topic they had deliberately avoided talking about or had been substantially dishonest about in therapy (Farber et al., 2019), concluding that the vast majority of clients acknowledged some form of concealment in therapy.

What are the most common forms of nondisclosure that clients report? In a survey of 1,345 therapy clients, Farber et al. (2019) reported the two most reported items were “I minimized how bad I really I feel” and “I minimized the

severity of my symptoms.” The third most reported form of nondisclosure was “My thoughts about suicide”, demonstrating that the seriousness of their psychological pain, including thoughts to end their lives, is often hidden from therapists. Further, Farber et al. (2019) found that suicidal thoughts were the third most reported item (21% of their sample) of *ongoing deception or dishonesty* in psychotherapy, involving processes of both active lying and deliberate avoidance. Did the truth ever come out in therapy? Farber et al. (2019) reported that the rate at which therapists eventually detected dishonesty regarding their clients’ SI was only 6%. Therefore, when conducting suicide risk assessment, therapists should consider that client reluctance to disclose SI is common (Nagdimon et al., 2021).

Many studies (D’Agata & Holden, 2018; Friedlander et al., 2012; Hales-Ho & Timm, 2023; Hogge & Blankenship, 2020; Hogge et al., 2023) corroborate that SI in particular is subject to *significant* nondisclosure. Calear and Batterham (2019) found that 58% of adult clients reported they had not disclosed their SI to any healthcare professional. Investigating frequency of nondisclosure of SI in a sample of adult psychiatric inpatients (N = 171), Høyen et al. (2022) found that 51.5% of the sample withheld some information on SI during admission. In a systematic meta-analysis of 94 studies (N = 1,044,629), Hallford et al. (2023) found that less than 46% of people with suicidal thoughts disclosed their SI. The overall conclusion of the study was that 50–60% of people do not disclose their SI to family, friends, or professionals, and thus remain unidentified and possibly untreated (Hallford et al., 2023). In a study of 245 young adults, Hogge and Blankenship (2020) found a significant positive relationship between self-concealment and SI. In a pilot study investigating suicide survivors, stigma, and concealment, Fulginiti and Frey (2018) found that 29% of survivors did not reveal an actual suicide attempt to anyone in their family, and survivors reported that approximately half (46%) of their family members held stigmatizing views of suicide attempters, indicating high degrees of stigma exposure in familial systems where survivors often reside during their recovery process (Fulginiti & Frey, 2018). In many instances, family members do not know when a member has attempted suicide or is struggling with SI.

Why do clients or patients conceal or withhold important truths about their deep psychological pain, and thoughts of ending their lives, from helping professionals? Farber et al. (2019) found clients’ wishes to “look good”—to be seen as competent, somewhat well-adjusted, or a “good person”—and to be viewed positively by one’s therapist can make nondisclosure an inviting option. Taboo subjects such as suicidal thoughts (Al-Halabi et al., 2021; Hales-Ho & Timm, 2023) can elicit profound levels of shame, embarrassment, and vulnerability, and these feelings can be associated with clients pulling back from discussing SI openly and candidly

(Baumann & Hill, 2016; Farber et al., 2019). Individuals may hesitate to openly share their thoughts to end their lives because of “codes” or “cultural scripts of silence” regarding emotional distress and suffering (Szlyk et al., 2019, p. 779), or they may feel that suicide is a “mortal sin,” rendering it even more taboo. In the case of SI, clients may fear hospitalization, impact on their career, being placed on watch, alarming the client’s family members, being forced to receive additional treatment or unwanted medication, and the possibility of re-traumatization (Farber et al., 2019; Sheehan et al., 2019). Thus, while therapists frequently would prefer to see themselves as allies to persons struggling or in recovery (Baier et al., 2020; Tilden & Wampold, 2017), there are numerous potential sources of working alliance rupture (Doran, 2006), and those suffering from SI can see their therapists as possible adversaries, “wielding the power of involuntary hospitalization or civil commitment” (Farber et al., 2019, p. 146). Blanchard and Farber (2020) found that 70% of SI concealers cited fear of involuntary hospitalization, a perceived outcome of disclosing even mild suicidal thoughts. Further, some persons experiencing SI have great difficulty identifying their feelings and describing their emotional pain to others due to alexithymia, or low emotional self-awareness (Bergmans et al., 2020). That is, they find it extremely challenging to identify, name, and communicate their feelings and their intense emotional distress to others.

Sociocultural factors (Chae et al., 2020; Chu et al., 2018; Hogge et al., 2023) can contribute to reticence to disclose suicidal thoughts. There can be public, individual, and familial stigma components associated with SI (Oexle et al., 2018), making any discussion of suicide prohibitive, or clients may strongly believe that no one can help them in their distressed state, “so what would be the point of talking about it?” Persons in law enforcement (Syed et al., 2020) and the military (Bernecker et al., 2019; Drew & Martin, 2021; Thomas et al., 2023) may worry that disclosure of trauma symptoms and SI will be perceived as a sign of weakness or an indication that they are *unfit for duty*, leading to denial of SI, even though suicide in active-duty military members has rapidly increased in recent decades (Love et al., 2020) and is the second cause of death in the US armed forces (Gutierrez et al., 2021; Mann & Fischer, 2019). Therefore, psychological and human resource personnel (e.g., staff psychologists, therapists, employment assistance programs, etc.) may find value in a subtle screening measure of suicidal ideation, as persons in these professions are often loath to seek help when experiencing psychological distress (Allen et al., 2014). Further, persons with stigmatized identities such as members of LGBTQIA+ communities (Lefevor et al., 2022; Reyes et al., 2023; Russon et al., 2022; VanBergen & Love, 2022), refugees (Killian & Agathangelou, 2018; Brown et al., 2019; Hogge et al., 2023), and other trauma survivors may adopt a survival strategy of concealing their

pain associated with the things they have experienced, with SI being just one more topic that they are certain other people “just couldn’t or wouldn’t understand.” As one research participant in the Farber et al. (2019) study put it, “Talking about suicide is never okay” (p. 150).

In sum, research has concluded that many suicide ideators do not disclose SI, sometimes to *anyone*, including helping professionals. The high rates of concealment repeatedly demonstrated in studies suggest that SI concealers could number in the millions (Farber et al., 2019), and evidence suggests that some clients who silently suffer with suicidal thoughts *never* disclose their SI to their therapists for a host of reasons. To address SI nondisclosure, the author aimed to develop a subtle screening for suicidal ideation with high sensitivity and high specificity that successfully identifies suicide ideators so that they may receive treatment.

Attempts to Measure Suicide Risk

Suicide prevention is aided by early identification and treatment of suicidal thoughts. But errors in suicide assessment do not always stem from poor clinical decision making. Frequently, they may result from solid clinical decisions being made from poor quality *data*. A piece of the puzzle often missing at the time of a clinical formulation is the extent of a patient’s or client’s current and historical suicidal ideation. In a naturalistic study of 66 suicide decedents (SDs), Bombersbach et al. (2018) found that health providers screened less than half of SDs in the year before death and less than 60% of SDs *ever* endorsed SI, with none doing so at final appointments, casting doubt on effectiveness of current screening practices. Limited predictability (Li et al., 2014), or *foreseeability*, of suicidal risk (Love et al., 2020) as well as the implicit challenges with accurate assessment (Regher et al., 2015; Tiesman et al., 2015) make detection of SI a major challenge for helping and health professionals (Behrman et al., 2019).

Gutierrez et al. (2021) reported inconclusive findings regarding a “best measure” for suicide risk assessment, with multiple researchers suggesting that suicide prediction and prevention have not significantly improved over the decades, with few suicidal risk devices proving adequate or effective in the quick, accurate assessment of risk (Dueweke et al., 2018). Researchers have created suicide assessments by combining items from scales that demonstrate high correlations with suicidal thoughts and behaviors (e.g., the Modular Assessment of Risk for Imminent Suicide, see Høyen et al., 2023). For instance, variables that correlate with and/or mediate suicidal thoughts and behaviors include hopelessness, thwarted belongingness, and PTSD (Ringer et al., 2018) and perceived burdensomeness (Rainbow et al., 2023), depression, anxiety, and positive affect (Forkmann et al.,

2018). Using a 57-item questionnaire assessing suicide risk factors via brief measures of SI (two items from the Beck Scale of Suicidal Ideation, $\alpha = .80$), hopelessness (three items from the Beck Hopelessness Scale, $\alpha = .69$), thwarted belongingness (five items from the thwarted belongingness subscale of the Interpersonal Needs Questionnaire, $\alpha = .90$), anxiety (five items from the Anxiety Sensitivity Index, $\alpha = .90$), and alcohol (three items from the AUDIT, $\alpha = .86$), Ringer et al. (2018) found all measures highly correlated with suicidal thoughts and/or behaviors. Finally, using a four-item measure of active and passive SI, Forkmann et al. (2018) found that two-item versions of scales measuring perceived burdensomeness (reliability of .72), thwarted belongingness (.72), depression (.80), positive affect (.87), and hopelessness (.75) demonstrated satisfactory reliabilities and correlated at the $p < .05$ and $p < .01$ levels with suicidal thoughts.

Researchers have theorized (e.g., Frey et al., 2016; Van Orden et al., 2008) and demonstrated (Ringer et al., 2018) that a most prominent predictor for suicide completion across demographics is prior history of suicidal behavior. However, as discussed above, clients and patients may be loath to disclose current or past suicidal behaviors. Another significant predictor of suicidal ideation and behavior is a strong wish to escape or avoid one's acute psychological pain, or *psychache* (Li et al., 2014; Pachkowski et al., 2020; Troister et al., 2015). Originally proposed by Shneidman (1993), *psychache* has been defined as an experience of deep and desperate emotional pain and is a frequent theme of suicide notes (Li et al., 2014). Flamenbaum (2011) stated that severe *psychache* can lead to thoughts of suicide, as shedding this mortal coil begins to represent a means of escaping overwhelming, unrelenting pain. When individuals become desperate enough, and all other means of coping begin to collapse or are viewed as useless and unsuccessful, suicide is viewed as a vehicle to get away from unbearable *psychache*.

In sum, therapists and behavior health professionals face challenges identifying a significant portion of suicidal individuals who might be detected by a more subtle means. As Thomas Kuhn posited, "The answers you get depend upon the question you ask." It is likely that higher percentages of suicidal clients and patients would be detected via the use of a subtle screening for SI (Vannoy & Robins, 2011; Yoon et al., 2020) comprised of proxy items tapping psychological distress. The major variables in the studies by Forkmann et al. (2018) and Ringer et al. (2018) were included in this study so that the subtle screening in development would be able to demonstrate its ability to account for a significant portion of the variance in SI while in competition with other variables in a multiple linear regression model.

Study Purposes and Hypotheses

The primary aims of this study were to develop a single-page, subtle screening for SI possessing good reliability and high convergent and discriminant validity and to establish a clinical cut-off score for the device that maximizes sensitivity (accurately identifies *true positives*, i.e., participants with symptoms of SI) and specificity (correctly identifies *true negatives*, i.e., those *without* symptoms of SI). The four hypotheses of the study are: (a) the Subtle Screening of Suicidal Ideation (SSSI) will significantly and positively correlate with suicidal ideation, PTSD, depression, and anxiety, and will significantly and negatively correlate with emotional self-awareness; (b) the SSSI will not significantly correlate with income, education, or self-compassion; (c) the SSSI will account for a plurality of variance in SI, exceeding that accounted for by other variables significantly correlated with SI; and (d) the SSSI will demonstrate good sensitivity and specificity (i.e., successfully discriminate between those with and without suicidal thoughts).

Method

Sample

The sample was comprised 306 adults, ages 18 to 70 ($M = 35.7$, $SD = 11.2$), from 47 states in the US (no participants resided in Hawaii, Alaska, or Wyoming). Female participants comprised 50.8% of the sample, males 48.2%, and transgender females 1%. By design, the sample was diverse and close to proportional to the racial demographics of the US population: White 56.3%, Latino/a 18.4%, African American 12.1%, Asian 6.0%, Native American 1.2%, multiracial 5.8%, and Native Hawaiian or Pacific Islander .2%. Regarding education, 30.5% had a high school diploma or GED, 26.3% had a bachelor's degree, 20.8% a master's degree, 17.0% an associate's degree, 2.9% had completed some high school, 1.7% had a PhD, and .7% an MD. Forty-nine percent of the participants were working 40 or more hours per week, 24.4% were working one to 39 h a week, 15.2% were unemployed and looking for work, 6.5% were unemployed and not looking for work, 2.5% were disabled, and 2.4% were retired. The median household income of the sample was \$60,000, very close to the national average. Of those employed, the most prevalent occupations were healthcare, sales, education, finance, and management. Sample size met expectations for adequacy for the purposes of principal components analysis, where the ratio of the number of

study participants to number of items in a scale is ideally between 5:1 and 10:1. The research participant-item ratio for the current study was 9.56:1.

Procedure

The 163-item survey questionnaire and informed consent form for the study was approved by the Institutional Review Board of my university. The data were collected via an electronic version of the questionnaire on the Qualtrics data collection platform, which included a detailed informed consent about the study's aim and purpose, and an explicit statement that participants could discontinue participation at any time. Specified quotas for the participant panel permitted the creation of a representative sample regarding sex (e.g., 51% female), race (e.g., 18.5% Latino/a, 12% African American, 6% Asian, etc.), education, and income. Respondents received a nominal compensation of one dollar for completing the electronic survey. As the data were collected from an anonymous, national sample, a toll-free phone number to a suicide counselor was provided in the informed consent ("If you for any reason feel distressed or upset after taking the survey, you may speak to a professional counselor at the following number: 1-800-273-TALK"), and this message was repeated on the survey's concluding page.

Regarding data cleaning, Qualtrics' data collection software is designed to detect possible automated responses by nonhuman participants (i.e., "robots") via a specific index. All participants ($n=8$) scoring below a criterion on this index, and any participants who did not respond to all SSSI items and/or failed to respond to two or more items in the total survey, were replaced with new participants. Following replacement, the original data set ($N=362$) was cleaned by deleting participants who: a) engaged in instances of nonmeaningful repetitive responses and b) completed the survey in less than five minutes (too rapid for thoughtful responses to all items; the median time for survey completion was 11.3 min). Missing data were managed by replacing the missing cells with the average of the participants' other endorsements on the specific scale in question. After cleaning, the researcher was confident that the data was robust, valid, and representative of the US population, much more so than data sets acquired through student research participant pools often utilized at universities. The final data set ($N=306$) was imported into SPSS 27, and reliability analyses, Pearson's r correlations, multiple regression, principal components analysis, and receiver operator characteristic (ROC) curve procedures were conducted.

Measures

Subtle Screening for Suicidal Ideation

The author compiled a pool of 32 items for a subtle screening, writing items tapping acute emotional distress and

psychological pain, inspired by Shneidman's theory of psychache (Flamenbaum, 2011; Shneidman, 1993). The item pool also drew from a previous instrument (Killian, 2012) measuring components of emotional intelligence, as emotional understanding and emotional regulation are inversely associated with suicidal ideation and suicidal behavior (see Dominguez-Garcia & Fernández-Berrocal [2018] for a systematic review). These items focused on the ability to identify emotions, motivation, and self-respect (sample item: "I had difficulty finding the words to communicate what I really feel"). Additional items tapping the DSM-5-TR PTSD criterion of negative alterations in mood and cognitions (APA, 2022) were also included (sample item: "I felt disconnected or withdrawn from other people"). Positively worded items were written to tap participants' senses of hope, positivity, and self-efficacy as reversed-scored items for hopelessness, negativity, and a sense of helplessness (e.g., "life was exciting and meaningful" and "Even when facing big challenges and hurdles, I finished every project that I started").

Two family therapy colleagues with backgrounds in psychometrics audited the item pool, assessing their readability and content validity as appropriate proxies to SI. A five-point response format was utilized, and the directions were as follows: "The following statements describe thoughts, feelings and experiences that many people have. Please read each item carefully and then select the response that best reflects how often you experienced it *in the past month*, including today. There are no 'right' or 'wrong' answers, so respond with the answer that indicates how often it is true for you as follows: (0) Rarely or Not at All, (1) A Little of the Time, (2) Some of the Time, (3) Much of the Time, (4) All of the Time." Additional items from the pool included "Because I have a lot of self-respect, I treated myself well," "I had less interest in, or patience for, everyday tasks and activities," and "I desperately sought relief from my psychological pain." While it was anticipated that positively and negatively worded items would likely split into different dimensions in a principal components analysis, a mix of positive and negative items was included to enhance: a) participants' thoughtful and meaningful engagement during administration, and b) the subtlety with which the instrument measured acute psychological distress by also inquiring about *positive* feelings and experiences.

A Measure of Suicidal Ideation

Five items ($\alpha = .81$ in the current study) tapping SI were drawn from the PHQ-5 ("During the last two weeks, how often have you had thoughts that you would be better off dead?"), the original Thwarted Belongingness scale ("These days, the people in my life would be better off if I were gone"), and three items from the Columbia Suicide Severity Rating Scale (C-SSRS). The anonymous electronic survey

collected no identifying information from participants, and confidentiality was assured, increasing the likelihood of candid, truthful responses to these items. Items used on any one scale in the current present were not utilized on any other scale (i.e., there was no “double dipping” of items). For example, the item from the Thwarted Belongingness scale used for the measure of suicidal ideation was not included in the computation of the variable Thwarted Belongingness in the study.

Brief Unbearable Psychache Scale

Pachkowski et al. (2020) validated a brief 3-item version of the original 13-item Psychache Scale (Holden et al., 2001). The items included in this study were “I can’t take my pain anymore,” “Because of my pain, my situation is impossible,” and “My pain is making me fall apart.” Cronbach’s alpha was .83 in the current study.

Brief Beck Hopelessness Scale (BHS)

The BHS is a 20-item self-report scale measuring the level of negative expectations about the future held by respondents over the previous week. The BHS scale has strong concurrent validity with clinical ratings of hopelessness ($r = .74$) and is associated with increased risk for death by suicide (Beck et al., 1990). Based on a confirmatory factor analysis, Aish and Wasserman (2001) found an excellent fit for a 4-item version of the BHS. Administering this shortened version to 2000 subjects, Yip and Cheung (2006) found a high correlation ($r = .88, p < .001$) between the brief version and the original 20-item BHS and reported the 4-item version differentiated patients with and without SI similarly to the original BHS, establishing its validity. The 4-item BHS scale had a Cronbach’s alpha of .84 in the current study (sample items: “Things just won’t work out the way I really want,” “My future seems dark to me,” and “The future looks vague and uncertain to me”).

The Interpersonal Needs Questionnaire

Van Orden et al. (2012) developed a 15-item measure of two components of Joiner’s (2005) interpersonal theory of suicide. The thwarted belongingness subscale assesses perceived feelings of alienation from others, and the perceived burdensome subscale taps feelings of being a burden to intimate others and society. All statements are rated on a 7-point Likert scale from 1 (not at all true for me) to 7 (very true for me). Van Orden et al. (2008) reported good internal consistency for the perceived burdensomeness ($\alpha = .86$) and thwarted belongingness subscales ($\alpha = .85$). The INQ also exhibits good concurrent, divergent, and criterion validity. Thwarted belongingness and perceived burdensomeness are

associated with increased odds of reporting current SI and SI at a 1-month follow-up (Van Orden et al., 2012). In the current study, to reduce response burden, brief versions of the two subscales were created using items with the highest factor loadings (Van Orden et al., 2012). The Cronbach’s alphas were comparable to or higher than the full length subscales: perceived burdensomeness (5 items, $\alpha = .87$ in the current study, sample items: “These days, the people in my life would be happier without me” and “These days I make things worse for people in my life”) and thwarted belonging (5 reverse-scored items, $\alpha = .90$ in the present study; sample items: “These days, I am close to other people”, “These days, other people care about me”, “These days I am fortunate to have many caring and supportive friends”, and “These days, I feel like I belong”).

A Brief Measure of Emotional Intelligence

An 11-item, brief version of emotional intelligence (Killian, 2012) was included because a) research studies have found that emotional intelligence plays a role in decreasing the severity of SI (see Dominguez-Garcia & Fernández-Berrocal, 2018), and b) it could help provide evidence for convergent validity for the Subtle Screening. The Cronbach’s alpha was .85 in this study, and a sample item was “When things go wrong, I stay positive and think pleasant thoughts.” In previously acquired data sets, the brief version of emotional intelligence correlated highly with the full version ($r = .85, p < .001$).

Additional Scales

Another form of intense psychological distress, traumatic stress, was measured via the 4-item SPAN, derived from the Davidson Trauma Scale (Meltzer-Brody et al., 1999; $\alpha = .87$ in the present study). A sample item was “Have you been physically upset by reminders of an event?” Additional measures included brief, reliable measures created from the items on the original scales, including alienation (Yang, 2015; 6 items, $\alpha = .90$; sample item: “I feel like I do not fit into the mainstream of this society”), and Self-Compassion (Neff, 2003, 3 items, $\alpha = .79$ in the current study; sample item: “I’m kind to myself when I’m experiencing suffering”). The survey also included measures of denial/disengaged coping from the Brief Cope (Carver, 1997; 4 items, $\alpha = .85$ in the present study; sample item: “I said to myself ‘this isn’t real’”), a two-item measure of positive affect ($\alpha = .83$ in the current study, items: “During the past 2 weeks, how much of the time have you felt happy?” and “During the past 2 weeks, how much of the time have you felt cheerful?”), and two-item measures of anxiety and depression ($\alpha = .79, \alpha = .77$, respectively, in the present study) taken from the PHQ-5 (sample items: “In the past

two weeks, how often have you been bothered by feeling nervous, anxious or edge” and “In the past two weeks, how often have you been bothered by feeling down, depressed or hopeless”).

Results

A principal components analysis (PCA) was conducted on the pool of 32 items for the Subtle Screening for Suicidal Ideation. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was .941, and Bartlett’s Test of sphericity produced a chi-square of 5977.39 ($df=528, p < .001$), indicating the data set met the requirements for analysis. The extraction method was principal components with eigenvalues set at 1.00, and as the items were expected to be moderately correlated with one another, the oblique, nonorthogonal rotation method (i.e., direct oblimin) was selected. Items with factor loadings less than .55 were suppressed in the analysis. The scree plot indicated three component factors that accounted for a total of 64.49% of the variance. The first factor, accounting for 45.76% of the total variance, comprised items of psychological distress/pain. The second factor, accounting for 12.31% of the variance, was composed of positively worded items tapping hopefulness and the self-respect component of emotional intelligence. The third factor, accounting for 6.42% of the total variance, and two additional components of emotional intelligence: motivation and the ability to identify one’s own emotions.

Initial eigenvalues for the 19 components ranged from 45.53 to .933. Factor loadings for the 19 items indicated potential for creating a measure with excellent internal consistency (see Table 1). Cronbach’s alpha was .93 and the split-half reliability was .92. The SSSI’s distribution was normal, with the measures of central tendency close together ($M=55.01, SD=15.79$, median = 56, and mode = 57), and a skewness of $-.158$ and a kurtosis of $-.138$.

Regarding construct validity, the 19-item version of the SSSI—a measure of acute psychological distress, comprised of proxy items for SI—was expected to strongly and positively correlate with SI, hopelessness, PTSD, depression, and anxiety. The SSSI was also expected to correlate strongly and negatively with emotional self-awareness, a variable that positively correlates with positive affect, well-being, and life satisfaction (Killian, 2012). As evidence of discriminant validity, the SSSI was expected to have non-significant correlations with income, education, and self-compassion, which is an altogether different construct from a measure of psychological distress and pain. The SSSI was also not expected to exhibit significant mean differences across racial groups. Finally, the SSSI was expected to accurately discriminate between participants with and without symptoms of SI.

Table 2 presents evidence of convergent and discriminant validity for the SSSI in the form of correlations with key variables. As expected, the correlations of the SSSI with SI ($r = .742, p < .001$), PTSD ($r = .757, p < .001$), depression ($r = .702, p < 0.001$), and anxiety ($r = .565, p < .001$) were

Table 1 Factor loadings of subtle screening for suicidal ideation items

Item	Factor		
	1	2	3
1. Couldn't take my psychological pain anymore	.852		
2. Could not deal with my problems any longer	.851		
3. Psychological pain unbearable	.841		
4. Psychological pain made life impossible	.838		
5. Couldn't withstand the pain	.837		
6. Nothing good, decent or redeeming in me	.782		
7. Felt unworthy or unlovable	.775		
8. Felt like I was falling apart	.763		
9. No one can really help me resolve my problems	.743		
10. Made things worse for people in my life	.694		
11. Disconnected or withdrawn from other people	.690		
12. Gave up trying to deal with my pain	.593		
13. Had a lot of respect for myself		.888	
14. Because I have a lot of self-respect, I treated myself well		.850	
15. Life exciting and meaningful		.768	
16. Encountering obstacles or problems became discouraged			.850
17. Obstacles/challenges kept me from achieving what I want			.825
18. People/situations/circumstances kept me from achieving goals			.799
19. Difficult to find the words to communicate what I really feel			.745

Table 2 Correlations establishing construct validity of the subtle screening for suicidal ideation

	SSSI	ESA	PTSD	Suicidal ideation	Depression	Anxiety	Income	Ed
Emotional self awareness (ESA)	-.782**							
PTSD	.757**	-.698**						
Suicidal ideation	.742**	-.542**	.535**					
Depression	.702**	-.588**	.541**	.511**				
Anxiety	.563**	-.533**	.514**	.444**	.678**			
Income	.005	-.032	.064	-.053	-.078	.066		
Education (Ed)	.039	-.049	.062	.019	-.009	.017	.446**	
Self-compassion	-.087	.017	.009	-.164*	-.031	-.035	.198*	.199*

**Pearson's r coefficient significant at the $p < .001$ level

* Pearson's r coefficient significant at the $p < .01$ level

strong and positive, and there was a strong, negative correlation between the SSSI and emotional self-awareness ($r = -.782$, $p < .001$), providing evidence of convergent validity. Regarding discriminant validity, the SSSI did not correlate significantly with income, education, or self-compassion. While a nonsignificant correlation with education and income is the preferred outcome, such a result is by no means guaranteed. Note that a three-item version of self-compassion significantly correlated with both income ($r = .198$, $p < .01$) and education ($r = .199$, $p < .01$) in this data set. Finally, in t -tests pairing all racial groups with one another, no comparison of means approached significance (i.e., the smallest p value was .29). Male participants scored 6.71 points higher than female participants on the SSSI ($t = 3.46$, $p < .001$).

A second Pearson's r correlation procedure was conducted, and as hypothesized, the SSSI correlated most highly with suicidal ideation ($r = .742$, $p < .001$), followed by hopelessness ($r = .639$, $p < .001$), alienation ($r = .569$, $p < .001$), burdensomeness ($r = .531$, $p < .001$), and denial/disengaged coping ($r = .475$, $p < .001$). Moderate, significant correlations were observed between suicidal ideation itself and thwarted belonging ($r = .199$, $p < .001$), self-compassion ($r = -.164$, $p < .001$), and positive affect ($r = -.147$, $p < .01$). To ascertain which constructs accounted for variance in suicidal ideation, the 11 variables correlating with SI at a significance of $p < .001$ were entered as independent variables (i.e., SSSI, hopelessness, emotional self-awareness, alienation, PTSD, burdensomeness, depression, denial/disengaged coping, anxiety, thwarted belonging, and self-compassion) from highest to lowest correlation coefficient coefficients in a forward stepwise, multiple regression analysis with SI as dependent variable. A model emerged ($F = 118.426$, $p < .001$) that included two independent variables: the SSSI and Hopelessness. The SSSI accounted for the majority of SI's variance, 54.8%, with a standardized Beta coefficient of .559 ($t = 8.31$, $p < .001$), and hopelessness accounted for an

additional 1.2% of SI's variance with a standardized Beta of .158 ($t = 2.432$, $p = .016$). The total variance of SI explained was 57.1% (all percentages are adjusted R -Squares).

Finally, regardless of the focus of a given assessment, the instrument should demonstrate, in addition to evidence of reliability and validity, *clinical utility* such that a score on it informs treatment plans and therapeutic interventions (Snyder et al., 2019). Therefore, a Receiver Operator Characteristic (ROC) Curve analysis was conducted to test the SSSI's ability to discriminate between participants with and without suicidal ideation. The ROC Curve analysis evaluates the diagnostic ability of scales, i.e., their ability to discriminate the "true state" of participants, and aids researchers in determining an optimal cut off score (Hajian-Tilaki, 2013). A negative case of SI was defined in this study as a participant's score of zero on the five-item suicidal ideation variable, and a positive case was defined as a score of a minimum of one to a maximum of 20 on SI.

The diagonal line from the lower left to the upper right of the ROC curve (see Fig. 1) represents the null hypothesis scenario in which a given instrument demonstrates *no* utility in correctly identifying *true positive* cases and *true negative* cases on the variable in question, in this case, suicidal ideation. The area under the curve of the diagonal line bisecting the square represents .50 of the total area. If the line generated for the SSSI lay directly on top of this diagonal line, this would indicate that the screening completely failed to discriminate between positive and negative cases of SI. In this scenario, one could just as well flip a coin as use the SSSI to determine whether someone has suicidal thoughts. Accordingly, Hosmer et al. (2013) asserted that areas under the curve (AUC) from .51 to .70 indicate *poor* discrimination only slightly better than a coin toss. An AUC of .70 to .80 is deemed acceptable, an AUC of .80 to .90 demonstrates excellent discrimination, and an AUC above .90 indicates "outstanding discrimination" (Hosmer et al., 2013, p. 177).

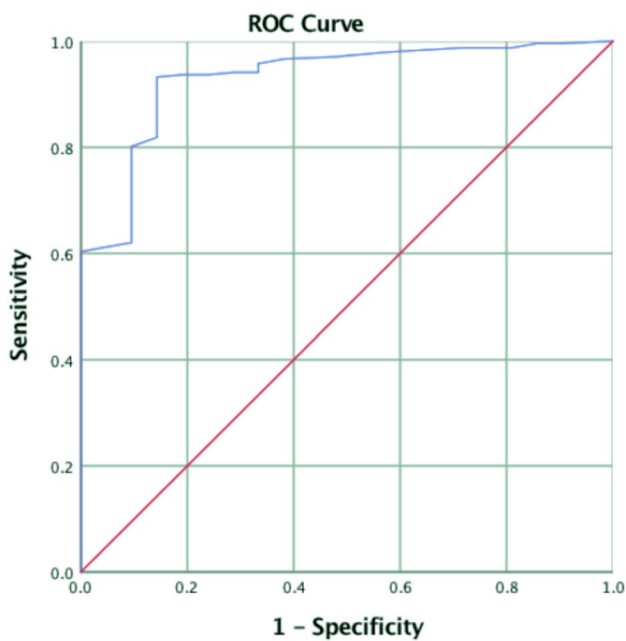


Fig. 1 Receiver operator characteristic (ROC) curve for the SSSI

Results from this statistical procedure included a determination of the AUC and the standard error. Regarding the Subtle Screening of Suicidal Ideation, the AUC was .930, and the ROC curve possessed a standard error of .026, an asymptotic significance of $p < .001$, and an asymptotic 95% confidence interval with a lower bound of .880 and an upper bound of .981. These results indicated the SSSI's high potential for discriminating between those with and those without SI. A metaphor for determining the best cut-off score to maximize the sensitivity and specificity of a given instrument is a seesaw, where maximization of the height of one side of the see-saw from the ground (e.g., sensitivity) leads to a minimization of the other side's height from the ground (e.g., specificity), and vice versa. Instrument developers examine the ROC curve's table of coordinates to find the "balance point" where *both* sensitivity and specificity would be satisfactory. Examination of the curve's table of coordinates showed that a cut-off score of 35 on the SSSI was best in that it afforded a sensitivity of .937 and a specificity of one minus .190, or .810. The cut-off score of 35 permits an excellent level of sensitivity (identifies true positives) and a very good degree of specificity (identifies true negatives) in regard to suicidal ideation, meaning that the SSSI successfully discriminates between those with and without suicide ideation. In comparison, the ROC Curve analysis of the Brief Psychache Scale produced an AUC of .877, a standard error of .034, an asymptotic significance of $p < .001$, and an asymptotic 95% confidence interval with a lower bound of .811 and an upper bound of .942. The curve's table of coordinates for the Brief Psychache Scale showed

a cut-off score of 3.5 produced a robust sensitivity of .944 but a poor specificity of .472, indicating that the Brief Psychache Scale was able to identify true positives but failed to identify true negatives.

Discussion

This study's purpose was to create a subtle screening of suicidal ideation, identify its psychometric characteristics, provide evidence that the SSSI accounts for a significant percentage of the variance in SI, and to demonstrate initial evidence of the SSSI's diagnostic discrimination between persons not endorsing suicidal thoughts and those endorsing low to high levels of SI. The study's four research hypotheses were supported by the results of the statistical analyses. Internal consistency and split-half reliabilities of the SSSI were very good at .93 and .92, respectively, and the device's correlations with other study variables provided solid evidence of construct validity. Regarding the first two research hypotheses, the SSSI's correlations with SI, PTSD, depression, anxiety, and emotional self-awareness were strong and significant in the expected directions. These results validate that the SSSI is tapping dimensions of severe emotional distress and psychological pain and provide evidence of convergent validity, and nonsignificant correlations with education, income, and self-compassion provided evidence of discriminant validity. Regarding the third hypothesis, the SSSI alone accounted for a majority of the variance in suicidal ideation (54.9%). Regarding the fourth hypothesis, the ROC curve analysis indicated that with a clinical cutoff score of 35 the SSSI provides excellent discrimination between suicide ideators and non-suicide ideators with a sensitivity of .937 and a specificity of .81. This contrasts with the Brief Psychache Scale, which demonstrated a strong sensitivity of .944 but a weak specificity of .472. In other words, the SSSI and the Brief Psychache Scale performed well in correctly identifying true positives but the Brief Psychache Scale failed to correctly identify true negatives on the variable of SI.

These initial findings, along with the lack of any significant mean differences on the SSSI across racial groups, suggest its appropriateness with clients across race, class, and educational levels. Males' higher mean difference on the screening may reflect the study's sample from a U.S. context where: a) white male adults account for the vast majority of deaths by suicide (e.g., 69.67% of suicide deaths in 2018), and b) men died by suicide 3.9 times more than women (American Foundation for Suicide Prevention, 2021). In a cross-national study of gender differences in suicide intent, Freeman et al. (2017) found "serious suicide attempts" were reported much more frequently ($p < .001$) in males than females. Therefore, the SSSI may be identifying adults whose psychological pain is so overwhelming that they

may possess serious suicidal intent. As with any screening, persons identified as “at risk” must be further assessed. A clinical cut-off score of 35 or higher on the SSSI indicates that clients are reporting severe distress, via the proxy items of psychological pain, low self-respect, low motivation, and difficulty identifying their emotions, suggesting the presence of thoughts of suicide.

Clinical Implications

The SSSI could be included as a part of assessment protocols in therapy agencies and behavioral health centers. A score of 35 or higher is vitally important information in ongoing assessment and treatment for the duration of therapy (Freedenthal, 2018; Love et al., 2020). Suicidal ideation in, and suicide attempts by, family members increase the suicide risk among other members by several times (Brent et al., 2015). An intergenerational family therapy theoretical lens, such as the Bowen approach, aids recognition of the powerful impacts of suicidal thoughts and suicide attempts, as cognitions and behaviors, have on family relationships, and how they can spur cross-generational patterns (Ballard et al., 2016). For example, studies have found an increased risk of mortality by suicide among those who had experienced sibling suicide death (Rostila et al., 2013) or a death by suicide in the family (Pereira & Campos, 2022). Suicidal ideation is significantly correlated with exposure to suicide in other close relationships (i.e., friends, acquaintances, extended family), and individuals losing a family member to suicide in their lifetime are 4.5 times more likely to experience SI (Song et al., 2015).

Further, research has also found that hidden SI may also be a “cultural phenomenon” defined as being associated with cultural risk factors and a potential indicator of greater suicide severity, with implications for culturally responsive detection and management of suicide risk for specific populations, such as members of the LGBTQIA+ communities (Lefevor et al., 2022; Reyes et al., 2023; Russon et al., 2022), perinatal mothers and fathers (Hales-Ho & Timm, 2023), refugees (Brown et al., 2019; Hogge et al., 2023), and ethnic groups such as Asian American Pacific islanders (Chu et al., 2018). Reticence to engage in disclosure and help seeking in the law enforcement and military cultures is also a well-known factor for therapists to consider when conducting assessment and treatment with family members who have served in these occupations. These studies of suicide risk factors highlight the importance of administering a subtle screening with a variety of populations and with clients who have been exposed to suicide via attempts or completion by persons close to them.

A first step in providing care for clients with thoughts of suicide is creation of a safety plan which may include

intimate partners and family members (Love et al., 2020). A safety plan can help clients to: (a) identify the contexts under which family members are at greater risk of harming themselves, (b) recognize when a member is feeling at risk of suicide, and (c) name what resources and coping mechanisms the suicidal person has available, especially when in crisis. Love et al. (2020) distinguished safety plans from no-suicide contracts, which “are contraindicated due to their lack of effectiveness in preventing suicides, primarily because the most significant function they serve is in alleviating the clinician’s discomfort” (p. 19) without helping suicidal clients develop alternate coping methods. Adopting a systemic approach to treatment, suicidal risk can also be managed by including trusted friends and/or family members or as consultants when a suicidal client is comfortable with this scenario. Inclusion of supportive persons allows improved assessment of clients’ current coping skills, availability of social network support, and ready access to emergency resources (e.g., toll-free hotline and local mental and behavioral health services).

There is growing evidence of the efficacy of some family therapy interventions in treating SI. In a meta-analysis, Waraan et al. (2021) found 10 randomized controlled studies of family therapy for depressive disorder or suicidal ideation in adolescents with an active treatment comparison group. While there was no significant difference between family therapy and active comparison treatments for *depression* at the conclusion of treatment, Waraan et al. (2021) concluded that “family therapy leads to significantly improved outcomes for suicidal ideation compared to other psychotherapies” (p. 831). Reviewing findings from 22 articles covering seven intervention categories, Frey et al. (2022) identified two *well-established* intervention categories (e.g., DBT and Family Training, and Systemic Principles) and three *promising* intervention categories (e.g., CBT and Parent Training, CBT and Systemic Principles, and Psychoeducation). As the suicide risk interventions for which Frey et al. (2022) found evidence focused only on *adolescent* populations, there remains a need for more family therapy research with adult populations and that explores the role of family mediators and moderators to see if suicide outcomes are reduced by improvement in the family environment.

“Subtle Screening for Suicidal Ideation” is a not-so-subtle title that could defeat the device’s aim of eliciting candid, truthful responses from participants loath to endorse traditional items used to screen for suicidal thoughts. Therefore, use of its acronym “SSSI” or an innocuous title such as TEA (i.e., Thoughts and Emotions Assessment) might be more appropriate for administration to clients. If clients or patients score two or lower on any of the positively worded items (or two or higher on the negatively worded items) tapping emotional self-awareness on the SSSI, a clinician could explore their struggles to identify their emotions, their difficulties

with persistence and perseverance, and the origins of their low level of self-respect. Tripping over the words needed to communicate feelings can represent an impediment to clients' understanding and descriptions of their affective experience and can be a significant stumble to emotional healing and engagement in therapy (Bergmans et al., 2020). Thus, participants' scores on SSSI scale items related to emotional self-awareness may be examined as a potential indicator of the risk of early termination and may suggest objectives for treatment. In such instances, therapy could address deficits in key components of their emotional self-awareness and delve into their repertoire of available coping strategies when experiencing acute psychological distress.

Limitations and Future Directions

One limitation of the study is that shared method variance (i.e., the use of self-report to measure the study's variables) may have contributed to the highly significant associations observed between the SSSI and SI, hopelessness, PTSD, depression, anxiety, and emotional self-awareness. In addition, suicide risk was operationalized as endorsement of suicidal *thoughts*, so another limitation is the imperfect detection of "true positives" versus "false positives" of *total* suicide risk, such as specific *behaviors* (e.g., having a specific plan or method, or an actual suicide attempt). Another possible limitation is the use of brief measures to reduce response burden rather than using the original, much longer instruments for the correlation and multiple regression analyses. Nevertheless, brief but highly reliable measures are frequently used by researchers (see for example the review of the literature above), and the reliabilities obtained in this study were good, signaling acceptable precision. Lastly, use of an electronic survey meant that all research participants had access to the internet via a computer, tablet, or smart phone. While over 90% of the US population have a smartphone (Gelles-Watnick, 2023), technological disparities persist and represent a possible limitation to generalizability of the study's findings.

While the SSSI can be completed in 6 min and is easily scored, a briefer version with comparable levels of sensitivity and specificity could be developed, perhaps via item response theory (Anderson & Miller, 2020), and the SSSI could be tested with samples of persons who have been diagnosed with SI via a structured clinical interview or who have made suicide attempts (e.g., participants in inpatient treatment programs). Future studies could also determine if the SSSI differentiates between suicide ideators and non-suicidal ideators in youth samples. The SSSI could be used regularly in therapy clinics and behavioral health centers as well as personnel offices in professions with elevated suicide risk (e.g., military and law enforcement) where help seeking

and disclosing acute psychological pain can be viewed as a sign of weakness.

Conclusion

Although there are a number of ways therapists can *attempt* to measure suicidal ideation, there is a need for instruments less subject to socially desirable responding that can subtly detect suicidal thoughts due to the well-established finding that SI is subject to significant nondisclosure and concealment. Clients and patients in general, persons who view suicide as something that simply cannot be talked about, persons with stigmatized identities who may be more prone to concealment as a survival strategy, and personnel in professions marked by significantly higher rates of suicide can benefit from administration of the SSSI. Using proxy items, the instrument demonstrated strong convergent and discriminant validity and excellent sensitivity and very good specificity in detecting participants with and without SI. The SSSI's clinical cut-off score of 35 identifies persons with likely SI, allowing for follow-up and a more in-depth exploration of intent, available methods, and any plan. By addressing the serious challenge presented by client stigma surrounding SI, via indirect and accurate assessment, the SSSI can assist in providing the requisite, good data that can lead to good clinical decision-making and, thereby, enhanced safety for clients and their families.

Data Availability The study's SPSS data file is available upon reasonable request.

Declarations

Conflict of interest The author has no competing interests to declare.

Ethical Approval The Institutional Review Board of the author's university approved the study from which the data were drawn. All participants received written information about the project's aim before participation and they gave written consent to participate. Participants were also informed that they could withdraw from the process at any time and demand the deletion of their data. Furthermore, it was explained that the encrypted data would be stored on the author's password protected computer and all study results would be published in a non-identifiable form.

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