Examining a Brief Suicide Screening Tool in Older Adults Engaging in Risky Alcohol Use

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Braithwaite, Scott R.; Ribeiro, Jessica D.; Peaff, Jon J.; and Joiner, Thomas E., "Examining a Brief Suicide Screening Tool in Older Adults Engaging in Risky Alcohol Use" (2012). *Faculty Publications*. 6007. [https://scholarsarchive.byu.edu/facpub/6007](https://scholarsarchive.byu.edu/facpub/6007)

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Alcohol misuse increases risk of suicidal behavior in older adults. The Depressive Symptom Inventory-Suicidality Subscale (DSI-SS; Metalsky & Joiner, 1997) and its relation to suicide attempt history was examined to see if it differed for older adults as a function of their alcohol use. Structural equation modeling was used in a sample (N = 1,061) of older adult outpatients to examine the scale’s measurement invariance and population heterogeneity and its relation to suicide attempt history. Analyses supported the equivalence of the DSI-SS in risky and nonrisky drinkers. The DSI-SS significantly predicted past suicide attempts. Findings support the viability of the DSI-SS as suicide screening tool for older adults.

Older adults have high rates of death by suicide worldwide (Bertolote, 2001; Conwell, Duberstein, & Caine, 2002). Moreover, although approximately 8 to 20 suicide attempts occur for every death by suicide in the general population (Crosby, Cheltenham, & Sacks, 1999), the ratio of nonfatal attempts to deaths by suicide is much smaller in older adults, with roughly only four attempts occurring for every death by suicide (Goldsmith, Pellmar, Kleinman, & Bunney, 2002; Miller, Segal, & Coolidge, 2001). This suggests that once initiated, suicidal acts are often lethal in later life.

Older adults are a particularly vulnerable population for a number of reasons. In part, the increased lethality of suicidal behaviors in older adults may be due to the greater fragility associated with old age (Conwell et al., 1998). Older adults also tend to have more limited social networks. Increased isolation may act as a precipitating factor, increasing the risk of suicidal ideation (Turvey et al., 2002); it also decreases the likelihood of other individuals intervening during a crisis (Conwell et al., 2002; Szanto et al., 2002). In addition to the limited physical health and social reserves, older individuals tend to be more deliberate and purposeful in their attempts to die by suicide, as evidenced by the tendency towards more violent methods that are often immediately lethal ( McIntosh, Santos, Hubbard, & Overholser, 1994). Older individuals are also much less likely to exhibit overt warning signs of suicide (Corney, Rich, Burke & Fowler, 1994).

Given that the risk of death from self-inflicted injury is significantly higher for older adults, early and aggressive intervention efforts are critical. A key step toward...
Reducing the risk of suicide is accurate detection of at-risk individuals. One of the most potent risk factors associated with late-life suicide is mental illness, with evidence to suggest that more than 90% of older adult suicide decedents were suffering from a diagnosable mental illness at the time of their death (Cavanagh, Carson, Sharpe, & Lawrie, 2003; Conwell, 2001). Alcohol use disorders are the second most prevalent psychiatric disorder associated with late-life suicide, preceded only by depression. Findings from psychological autopsy studies suggest that rates of alcohol use disorders in older adults who die by suicide range from 3% to 44% (Conwell et al., 1996; Conwell, Olsen, Caine, & Flannery, 1991). Although the rates of alcohol use disorders are considerably higher for younger cohorts (Henriksson et al., 1993; Turvey et al., 2002), research that relies strictly on Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria to define alcohol misuse may be overly stringent for older populations, as the majority of older adults who experience alcohol-related problems do not meet the DSM criteria for an alcohol use disorder (Barry, Oslin, & Blow, 2001). Moreover, although younger cohorts may have higher rates of alcohol use disorders before dying by suicide, this may be due—at least in part—to the fact that drinking behavior decreases with age (Turvey et al., 2002).

The extant literature bearing on the relationship between alcohol and late-life suicide is relatively sparse; however, there is some research supporting the proposition that alcohol misuse may be a salient risk factor for suicide in older adult populations. Several studies have reported that alcohol misuse has been found to be independently associated with late-life suicide. According to Ross, Bernstein, Trent, Henderson, and Paganini-Hill (1990), older adults who died by suicide were more likely to have a longer history of alcohol misuse. Consistent with these findings, Waern (2003) also found that alcohol use disorders were predictive of suicide risk, even after controlling for other Axis I disorders. Furthermore, older adults who consumed three or more drinks per day were found to be roughly 16 times more likely to die by suicide as compared to individuals who did not drink (Grabbe, Demi, Camann, & Potter, 1997). Alcohol misuse may also exacerbate other known risk factors for late-life suicide, such as depression and social isolation (Blow, Brockmann, & Barry, 2004). Arguably, then, alcohol use in general may be an even greater risk factor for suicidal behavior in older adults than it is for younger populations.

Despite the staggering rates of death by suicide in the older adult population, the detection of older adults at risk of suicide remains largely lacking. One viable point of intervention for identifying at-risk older adults is in primary care settings, given the increased utilization of the primary care sector in older age. According to Bruce et al. (2004), more than 7% of elderly primary care patients will report some suicidal ideation. Unfortunately, current intervention methods in primary care settings may not be sufficient—nearly 70% of elderly suicide decedents visit their primary care provider within the 30 days prior to their death, 39% within 1 week, and 20% the same day (Conwell, 1994). Taken together, these findings suggest that although primary care stands as a promising venue for detection of high-risk individuals, risk assessment procedures currently in place in primary care settings are largely insufficient.

Although recent efforts have emerged examining the validity and utility of risk assessments in geriatric populations (e.g., Heisel, Duberstein, Lyness, & Feldman, 2010; Heisel & Flett, 2006), research examining the psychometric properties as well as the validity and utility of suicide risk assessments in older adults remains limited. Research examining the validity of risk assessment measures in alcohol-using older adult populations is even more limited (Center for Substance Abuse Treatment, 2009). Given this, future research evaluating the psychometric properties of available suicide risk assessment instruments for alcohol-using older adults is critical. In the absence of such research, strong inferences cannot be made...
about whether existing suicide risk assessment instruments operate similarly for older adults who drink versus those who do not.

In light of increased utilization of primary care settings by older adults, it may be particularly prudent to examine the utility of suicide risk assessment instruments in the primary care sector. Although the time constraints may make extensive suicide risk assessments impractical, the relatively high prevalence of suicidal patients presenting at primary health care settings and the morbidity and mortality associated with suicide call for some form of intervention. The Depressive Symptom Inventory-Suicidality Subscale (DSI-SS; Metalsky & Joiner, 1997) stands as one potential screening tool to be used with an at-risk population since it is brief—consisting of only four straightforward questions about suicidal ideation—and has been shown to have good reliability and validity (Joiner, Pfaff, & Acres, 2002).

Given the heightened risk of suicide in older individuals and their frequent use of primary health care, the DSI-SS may prove an efficient means of screening high-risk individuals in this setting. As previously mentioned, research indicates that alcohol use—even at relatively low levels—may be predictive of suicidal behavior in the older adult population. Furthermore, since drinking behavior differentially predicts suicide risk, it is possible that standard risk assessment instruments are influenced by alcohol use such that they may operate differently in alcohol-using populations. Yet, to our knowledge, no studies have examined whether existing suicide risk assessment screening measures work similarly in individuals who engage in risky drinking versus those who do not. Results of such research would have important implications for both clinicians and researchers in the field of suicide risk assessment. Thus, the focus of this study was to determine whether the DSI-SS stands as a viable suicide screening instrument regardless of alcohol use behavior. To examine this, we used structural equation modeling multiple-group analysis to test whether the factor structure for the DSI-SS was invariant across groups of older individuals who engage in potentially risky behavior. Should the scale work differently across groups, findings would indicate a need to develop psychometrically sound risk assessment instruments specifically designed for older adults who consume alcohol. Alternatively, should the measure be invariant across groups, findings would suggest that the DSI-SS is a psychometrically sound measure of suicide risk that can be used in older adults regardless of drinking behavior. We expected that the DSI-SS would not operate significantly differently for older individuals who drink versus those who do not. Furthermore, we expected that the DSI-SS would significantly predict history of suicide attempts, which is one of the strongest predictors of death by suicide (Brown, Beck, Steer, & Grisham, 2000; Joiner et al., 2005), in both groups.

**METHOD**

**Participants and Procedure**

Participants were older adult outpatients recruited from 54 randomly selected general practitioners’ (GP) offices in Western Australia. Enrollment at each site was open for 4 weeks, and a maximum of 15 consecutive outpatients were invited to participate in the study per practitioner. Inclusion criteria required that participants be at least 60 years of age and able to read English. Participants were also required to be able to provide written informed consent. Participants were invited to participate in the study by a nurse practitioner or receptionist while waiting for their medical consultation. After providing informed written consent, each participant was provided with a packet of self-report questionnaires, which was completed and returned to the office staff in a sealed envelope prior to the participant’s appointment. Participants’ sealed questionnaire envelopes were posted en masse to the research team at the end of the 4-week period. Study participation and results were not disclosed to the GP.
Of the 1,434 individuals invited to participate, 1,061 individuals (74%) agreed to participate in the study. Demographics of the sample were generally representative of the area of recruitment for this age group. Age ranged from 60 to 101 (M = 72.23, SD = 7.39), and 57% of the sample was female. Sixty-nine percent of respondents reported that they were married, 19% reported that they were widowed, 8% reported that they were divorced or separated, and the remainder reported that they were either never married or currently cohabiting. Seventy-five percent of the sample reported that they lived in their own home, 23% reported that they lived in an assisted living community or residential or nursing home, and 2% reported that they lived in a relative’s home.

**Measures**

(Current Suicidal Ideation). The DSI-SS (Metalsky & Joiner, 1997) was used as a measure of current suicidal ideation. The DSI-SS consists of four self-report items focusing on frequency and intensity of suicidal thoughts and urges during the past 2 weeks. Each item is scored on a 4-point Likert scale ranging from 0 to 3. Total scores can range from 0 to 12, with higher scores representing increased severity of suicidal ideation. Prior studies have reported good validity and psychometric properties for the measure (e.g., Joiner & Rudd, 1996; Joiner et al., 2002). In the present sample, coefficient alpha scale reliability was 0.86. In the subset of individuals who reported the heaviest drinking (i.e., daily), the coefficient alpha reliability was 0.92. Refer to Table 1 for the descriptive statistics for variables related to current suicidal ideation.

(Suicide Attempt History). Participants were asked to report the number of times they had attempted suicide in their lifetime.

(Alcohol Use). Alcohol use was assessed using a single item, which asked: “During the past 12 months, how often have you had a drink containing alcohol?” Response options were never, less than monthly, monthly, weekly, and daily or almost daily. Similar single-item assessments of unhealthy drinking have been shown to have adequate reliability and validity as measures of at-risk drinking behavior (Dollinger & Malmquist, 2009; Smith, Schmidt, Allenworth-Davies, & Saitz, 2009; Taj, Devera-Sales, & Vinson, 1998). Because we were interested in whether the DSI-SS works similarly for older adults who engage in potentially risky drinking behavior, this variable was recoded to reflect whether people reported drinking daily (risk drinking; coded as 1) versus those who had used alcohol less than daily (non-risk drinking; coded as 0). This recoded variable determined group status in our analyses.

**RESULTS**

Descriptive statistics and inter-item correlations appear in Table 1. Data were screened for outliers and violations of normality prior to conducting main analyses. Several of the DSI-SS items evidenced potentially problematic levels of skew and kurtosis. This was as expected since the DSI-SS is designed to measure suicidal ideation, which is a low base-rate phenomenon and consequently unlikely to be normally distributed in the general population. To address this, robust maximum likelihood (MLR) was used as the method of estimation for our analyses. Missing data were minimal in our analyses, with the lowest covariance coverage value for a pair of items being 0.99—falling well above the recommended acceptable value of 0.50 with full information maximum likelihood (FIML; Muthén & Muthén, 1998–2007). Post hoc power analyses were conducted using the test of not close fit as our criterion and results suggested the minimum sample size in order to achieve power of 0.80 was 2,382. Thus, insufficient power using the present sample may be problematic in the current study.

In order to evaluate overall model fit, several fit indices were considered in tandem. In particular, we considered indices of absolute fit (standardized root mean square residual [SRMR]), fit adjusting for model parsimony
Confirmatory Factor Analysis

Prior to examining the measurement invariance and predictive validity of the DSI-SS, we first examined the factor structure by conducting a confirmatory factor analysis (CFA) of a single latent variable, with four observable indicators. As anticipated, goodness-of-fit indices strongly indicated that the one-factor model provided excellent fit to the data with the model evidencing a YB $\chi^2$ of 0.12 (d.f. = 2; $p = \text{ns}$), an RMSEA value of 0.00 (90% confidence interval of 0.00–0.06), CFI of 1.00, TLI of 1.00, and SRMR of 0.01.

The factor loadings, communalities, and standardized residuals are displayed in Table 2. Examination of the pattern of loadings of the one-factor solution indicated that all items had acceptable magnitudes and significant loadings on the one factor. The magnitudes of all loadings were strong, with the strongest loading (0.84) pertaining to Item 2 and the lowest loading (0.78) associated with Item 4. There were no negative residual variances, further supporting the viability of the model. Inspection of standardized residuals and modification indices did not reveal any significant areas of strain.

With evidence for a viable measurement model of the DSI-SS in the entire sample, it is now appropriate to examine the scale’s reliability and generalizability across groups that differ based on drinking status. This was the objective for the measurement equivalence analyses detailed in the next section.

Measurement Equivalence

In order to examine the generalizability of the scale’s factor structure, tests of equal
form, equal factor loadings, and equal indicator intercepts were considered in a sequential fashion. Importantly, these tests were conducted after examining the viability of the model separately in both groups. The Yuan-Bentler scaled chi-square difference testing was used to evaluate measurement equivalence with a nonsignificant increase supporting measurement equivalence.

Single-Group CFAs. Prior to conducting simultaneous tests of equality, we first established the viability of the model separately in both nonrisky drinkers (n = 773) and risky drinkers (n = 228). With respect to the nonrisky drinking group, the model was associated with an SRMR of 0.02, an RMSEA value of 0.02, a CFI of 0.99, a TLI of 0.96, and a YB $\chi^2 = 0.31$, d.f. = 2, $p = ns$—all indices indicating good to excellent fit. Similarly, strong fit indices were also associated with the model in risky drinkers (YB $\chi^2 (2) = 0.48$, $p = ns$; SRMR = 0.03; RMSEA = 0.05; CFI = 0.96; TLI = 0.88). The models in both groups consisted of statistically significant factor loadings that ranged from 0.74 (Item 1) to 0.85 (Item 2) in nonrisky drinkers and 0.75 (Item 4) to 0.91 (Item 1) in risky drinkers. Refer to Table 3 for a summary of these findings.

Equivalent Factor Structure. Tests of equal form involve the simultaneous analysis of factor structure of the DSI-SS in order to determine whether it is equivalent across groups. The loading of Item 2 was set to 1.0 for all group analyses in order to handle scale dependency. Results indicated good to excellent overall fit (YB $\chi^2 (4) = 0.79$, $p = ns$; CFI = 0.98; TLI = 0.93; RMSEA = 0.03; SRMR = 0.02) when the same factor structure was specified for both groups simultaneously. As such, these results support an equivalent factor structure (i.e., number of factors and pattern of loadings) for risky and nonrisky drinking groups.

Equivalent Factor Loadings. After establishing equivalent factor structure, we examined the equivalence of factor loadings for the risky and nonrisky drinking groups. This analysis involves placing equality constraints on the factor loadings for risky and nondrinking groups. Indicator loadings, therefore, may vary within but not across groups. The model generated the following fit indices: YB $\chi^2 (7) = 0.50$, $p = ns$; CFI = 1.00; TLI = 1.00; RMSEA = 0.00; SRMR = 0.03. A nonsignificant result of the YB chi-square difference test (YB $\chi^2$diff (3) = 0.64, $p = ns$) indicated that the model specifying equivalent factor loadings failed to significantly reduce model fit when compared to the baseline model, providing evidence for equivalent factor loadings for risky and nonrisky drink groups.

### Table 3

<table>
<thead>
<tr>
<th>Item</th>
<th>Content</th>
<th>Standardized Loadings</th>
<th>Standardized Residuals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Estimate</td>
<td>SE</td>
</tr>
<tr>
<td>Nonrisky drinkers (n = 773)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSI-SS 1</td>
<td>Thoughts</td>
<td>0.74</td>
<td>0.10</td>
</tr>
<tr>
<td>DSI-SS 2</td>
<td>Plans</td>
<td>0.86</td>
<td>0.04</td>
</tr>
<tr>
<td>DSI-SS 3</td>
<td>Control</td>
<td>0.75</td>
<td>0.09</td>
</tr>
<tr>
<td>DSI-SS 4</td>
<td>Impulses</td>
<td>0.80</td>
<td>0.08</td>
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<tr>
<td>Risky drinkers (n = 288)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSI-SS 1</td>
<td>Thoughts</td>
<td>0.91</td>
<td>0.05</td>
</tr>
<tr>
<td>DSI-SS 2</td>
<td>Plans</td>
<td>0.89</td>
<td>0.06</td>
</tr>
<tr>
<td>DSI-SS 3</td>
<td>Control</td>
<td>0.86</td>
<td>0.08</td>
</tr>
<tr>
<td>DSI-SS 4</td>
<td>Impulses</td>
<td>0.75</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Note. All parameters are statistically significant with a cutoff of Est/SE = 1.96. CFA, confirmatory factor analysis; SR, standard error.
Equivalent Indicator Intercepts. Evaluating the equivalence of indicator intercepts calls for the inclusion and comparison of mean structures. Should analyses support equivalent intercepts, observed scores on an indicator at a given level of a latent factor would be equivalent for risky and nonrisky drinkers. Model fit was excellent as evidenced by values of 1.00 for the CFI and TLI as well as an RMSEA of 0.00, SRMR of 0.03, and nonsignificant YB $\chi^2$ of 0.94 (d.f. = 10). As the YB chi-square difference test (YB $\chi^2$diff (3) = 1.23, $p = ns$) was not significant, it appears that indicator intercepts are equivalent for risky and nonrisky drinking groups.

Equivalent Error Variances. The last step in evaluating measurement invariance is evaluating the equivalence of indicator error variances. Although the prediction of equivalent observed scores across groups does not rely on equivalent indicator error, the test of equivalent error variances comes into play when examining the equivalence of reliability of an assessment across groups (Brown, 2006). Again, fit indices associated with this model were strong (CFI = 1.0; TLI = 1.0; RMSEA = 0.00; SRMR = 0.04; YB $\chi^2$ (14) = 0.68, $p = ns$). Equivalence of the error indicator was also established (YB $\chi^2$diff (4) = 2.14, $p = ns$).

Population Heterogeneity

Results from the measurement equivalence analyses present above indicate that the DSI-SS is measuring a similar construct in a similar fashion in both risky and nonrisky drinkers. With that, we can transition to evaluating the structural parameters of the DSI-SS model across groups. To this end, we examined both the equivalence of the factor variance and latent means in risky and nonrisky drinking groups.

Factor Variance. In order to determine whether the dispersion (i.e., within-group variability) of the DSI-SS differs in risky versus nonrisky drinkers is equivalent, we examined the equivalence of the factor variance. With a CFI of 1.0, TLI of 1.0, RMSEA of 0.00, SRMR of 0.06, and YB $\chi^2$ (15) of 0.70 ($p = ns$), the model provided excellent fit to the data. Equivalence of the factor variance was also established (YB $\chi^2$diff (1) = 0.42, $p = ns$) with a nonsignificant reduction in YB $\chi^2$.

Latent Means. The objective of this analysis was to evaluate whether risky and nonrisky drinking groups differed with respect to levels of the underlying DSI-SS latent construct. To this end, an equality constraint was placed on the factor means of both groups. Beyond providing good fit to the data (CFI = 1.0; TLI = 1.0; RMSEA = 0.00; SRMR = 0.06; YB $\chi^2$ (16) = 0.80, $p = ns$), the model also specified failed to significantly reduce YB $\chi^2$ (YB $\chi^2$diff (1) = 1.04, $p = ns$), supporting the equivalence of latent means across groups. See Table 4 for a summary of the measurement equivalence and population heterogeneity results.

Predictive Validity

As measurement equivalence and population heterogeneity analyses indicated that the DSI-SS functioned similarly for risky and nonrisky drinkers alike, we transitioned to examining the strength of the association between the DSI-SS and suicide attempt history. To this end, a structural equation model was specified with DSI-SS regressed on suicide attempts. Refer to Figure 1 for a diagram of the model. Fit indices suggested the model provided good to excellent fit to the data (CFI = 0.98; TLI = 0.96; RMSEA = 0.02; SRMR = 0.03; YB $\chi^2$ (5) = 1.12, $p = ns$).

DISCUSSION

There is no question that older adults worldwide represent a population at high risk of death by suicide. Risky drinking behavior represents one factor that significantly and independently increases suicide risk in older adults (Conwell, 2001). Yet, the literature examining the viability of suicide risk assessments and interventions in older...
adults who are engaging in risky drinking practices is sparse. The primary objective of this study, therefore, was to present the DSI-SS as a suicide risk assessment screening tool for older adults, especially those engaging in potentially risky drinking behavior. To do so, we examined whether the DSI-SS operated similarly in elderly outpatients as a function of their alcohol use, using a structural equation modeling multiple-group analysis.

Taken together, the findings from this investigation support the viability of the measure in older adults, regardless of alcohol use status. Results from the multiple-group analyses presented in this article provide support for the generalizability of the DSI-SS. Our findings suggest that in both risky and nonrisky drinkers, the DSI-SS has an equivalent latent factor structure and loadings. Analyses also indicate that, at any given level of the latent variable, observed values are equivalent in both groups as our findings are supported by equivalent indicator intercepts across groups. The finding that error variance is also equivalent, regardless of alcohol use, has implications for the equivalence of reliability assessments of the measure. Population heterogeneity findings were also positive in that it appears the structural parameters of the model are equivalent in both groups—that is, the variance and mean of the latent variable is similar in both non-risky and risky drinking groups. Importantly, our results also support the construct validity of the measure as an index of suicide risk as it significantly predicted history of suicide attempts, one of the strongest predictors of death by suicide (Brown et al., 2000; Joiner et al., 2005).

Despite the fact that findings were in line with our predictions, there are a number of limitations to the present study. First, the cross-sectional nature of the data precludes

### Table 4
Tests of Measurement Invariance and Population Heterogeneity of DSI-SS in Risky and Nonrisky Drinkers

<table>
<thead>
<tr>
<th></th>
<th>MLR Scaling Factor</th>
<th>YB ( \chi^2 ) diff</th>
<th>( \Delta ) d.f.</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>SRMR</th>
</tr>
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<tr>
<td>Single-group solutions</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Nonrisky drinkers</td>
<td>2.91</td>
<td>2</td>
<td>9.31</td>
<td>–</td>
<td>0.99</td>
<td>0.96</td>
<td>0.02</td>
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<td>Risky drinkers</td>
<td>3.68</td>
<td>2</td>
<td>7.63</td>
<td>–</td>
<td>0.96</td>
<td>0.90</td>
<td>0.05</td>
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<tr>
<td>Factor structure</td>
<td>6.51</td>
<td>4</td>
<td>8.47</td>
<td>–</td>
<td>0.98</td>
<td>0.93</td>
<td>0.03</td>
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<tr>
<td>Factor loadings</td>
<td>5.67</td>
<td>7</td>
<td>11.44</td>
<td>0.64</td>
<td>3</td>
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<tr>
<td>Indicator intercepts</td>
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<td>8.34</td>
<td>1.23</td>
<td>3</td>
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<td>Error variances</td>
<td>9.05</td>
<td>14</td>
<td>13.22</td>
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<td>Latent means</td>
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<td>12.67</td>
<td>1.04</td>
<td>1</td>
<td>1.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Note. \( \chi^2 \), Chi-square; d.f., degrees of freedom; MLR Scaling Factor, robust maximum likelihood scaling factor; YB \( \chi^2 \), Yuan-Bentler scaled chi-square; SRMR, standardized root mean residual; CFI, Comparative Fit Index; TLI, Tucker-Lewis Index; RMSEA, root mean square error of approximation; DSI-SS, The Depressive Symptom Inventory-Suicidality Subscale.

Figure 1. Structural equation model of DSI-SS scores predicting past suicide attempts. Note. Thoughts = DSI-SS Item 1; Plans = DSI-SS Item 2; Control = DSI-SS Item 3; Impulses = DSI-SS Item 4. SS, The Depressive Symptom Inventory-Suicidality Subscale. **p < .001.
strong causal inferences about relationships between the examined variables. We examined a model in which scores on the DSI-SS predict past suicide attempts not future outcome. As true predictive validity would involve prospective analyses, using a longitudinal design would be optimal. Furthermore, we used only self-report data. Multiple methods of assessment including structured clinical interviews would have been more desirable. Relatedly, groups were not determined based on the presence of an established alcohol use disorder; instead, they were defined based on the frequency of their alcohol use. Although research indicates that the threshold of risky drinking is lower in the older adult population, in the absence of formal abuse or dependence diagnoses it is unclear whether all individuals included in the drinking group were significantly different from the non-drinking group. It should also be noted that level of cognitive impairment was not assessed in our sample; as such, it is possible that issues of cognitive impairment may have influenced some participants’ responding. The data were screened, however, for univariate and multivariate outliers, and appropriate measures were taken to address these issues statistically. Further, the final SEM model did not control for possible confounding variables, such as mood or anxiety disorder symptoms. Finally, the baseline models for the individual groups were underpowered—the model for risky drinkers particularly so. Future studies are needed to examine similar questions as the ones examined here using larger samples, longitudinal designs, and multiple methods of measurement that include assessments of possible confounding variables.

Limitations notwithstanding, several implications of these findings are worth noting. To our knowledge, the present study represents one of very few studies examining a suicide screening instrument that can be administered to older adult populations, regardless of alcohol use. Given its straightforward brief nature and sound psychometrics, the DSI-SS may be particularly well suited for primary care settings. Studies indicate that as much as 75% of older adults who die by suicide interact with their primary care physician within the month before death (Conwell, 2001). As such, primary care settings may serve as a crucial point of intervention. We would encourage physicians to administer the DSI-SS to individuals who are at greater risk of suicide, such as those suffering from depression or engaging in risky drinking.

In sum, older adults have consistently been identified as a population at elevated risk of death by suicide worldwide (Bertolote, 2001; Conwell et al., 2002). Despite this, older adults remain a significantly underserved population as compared to other age groups (Bartels, 2003), and research on effective evidence-based assessments and interventions in the elderly is sparse. Developing adequate suicide risk assessments and interventions in this population is critical. Our findings are promising with respect to the utility of the DSI-SS because they suggest that despite the fact that alcohol use has been shown to predict different rates of suicidal ideation and behavior, the DSI-SS does not function differentially for older adults on the basis of their alcohol use. Considering its brevity, it lends itself well to primary care settings and other settings where available time for assessment is limited. In light of older adults’ increased utilization of primary care services, enhancing suicide risk assessment procedures and intervention measures in these settings is crucial and potentially life-saving.

REFERENCES


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Manuscript Received: March 24, 2012
Revision Accepted: March 28, 2012