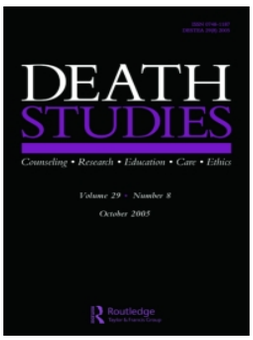

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Deliberate self-harm among younger and older adults

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ABSTRACT

This study examined self-harming behaviors among younger and older adults who completed the Self-Harm Inventory (SHI). A 2 (age group) × 2 (gender) analysis of variance showed a significant main effect for age such that younger adult students ($M = 3.42$, $SD = 3.86$) had higher SHI total scores than community-dwelling older adults ($M = 1.58$, $SD = 2.35$). Younger adults endorsed "Yes" responses significantly more frequently than older adults on 13 of 22 items. Future research should examine specific behaviors of older adults who self-harm more frequently and explore relationships between self-harming behaviors and other risk and resiliency factors for elder suicide.

Deliberate self-harm is a purposeful, nonfatal way of inflicting pain or injury upon oneself in ways that are not culturally or socially sanctioned. Importantly, there is no intent to die with deliberate self-harm. Although the relationship between self-harm and suicide is multifaceted and not fully understood, it appears that individuals who have engaged in self-injurious behaviors are more likely to attempt suicide than those who have never exhibited those behaviors (Fliege, Lee, Grimm, & Klapp, 2009; Hazma, Stewart, & Willoughby, 2012). Deliberate self-harm, sometimes called *self-injurious behavior*, is often considered to be part of the spectrum of suicidal behaviors, consisting of self-harm at the less intense end of the spectrum, and then including suicidal thinking, suicide attempts, and suicide death along the continuum of increasing severity.

Despite elevated rates of suicide among older adults (Van Orden & Conwell, 2015), limited research exists regarding the basic nature of self-harming behaviors in this population. In an early report, Australian older adults hospitalized after deliberate self-poisoning were diagnosed with major depression significantly more often, stayed longer in the hospital, and had a higher mortality rate (5%) than the younger patients (Ticehurst et al., 2002). In a study of self-harm patients in emergency departments in England, older patients reported past self-harm less frequently than younger patients, but older adults also reported self-poisoning to be a more common method of self-harm than younger patients (Marriott, Horrocks, House, & Owens, 2003). In a similar study, overdosing of medication was the most common method of self-harm among a small sample of older adults presenting to emergency departments in London, England (Ruths, Tobiansky, & Blanchard, 2005).

In an interesting twist, older adults who had self-harmed were more likely to have disintegrated social support networks and were more hopelessness than older adults without a history of self-harm (Dennis, Wakefield, Molloy, Andrews, & Friedman, 2005). A follow-up study from this group indicated that self-harm was related to poor physical health and that researchers rated a majority of the depressed older adults who self-harmed (58%) as wanting to die at the time of the episode (Dennis, Wakefield, Molloy, Andrews, & Friedman, 2007). These findings highlight the fact that self-harm in older adults may reflect elevated suicide intent. More recently, a large study examined risk factors for repetition and suicide following self-harm among 1177 older adults presenting to one of six hospitals in England (Murphy et al., 2012). Almost 13% of these older adults repeated self-harm within a year and 1.5% died by suicide within the year. In their study, the highest risk of eventual death by suicide was among men 75 years old and older.

A limitation of many of these early studies is that the researchers simply focused on self-harm as a categorical variable (coded either yes or no) often based on a clinical interview without looking at specific self-injurious behaviors using standardized assessments. Further, few studies to date have compared self-harming behaviors among nontreatment seeking younger adults and older adults using standardized assessments. Indeed, the study of self-harm in community samples is especially

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important because most people who demonstrate self-harming behaviors do not present for clinical services (Kidger, Heron, Lewis, Evans, & Gunnell, 2012). To address these gaps, the primary purpose of this study was to explore self-harming behaviors in a cross-sectional design, using a standardized self-report measure, the Self-Harm Inventory (SHI; Sansone, Wiederman, & Sansone, 1998). Because older adults are known to make serious and lethal suicide attempts, and consequently may not make more subtle suicidal gestures, we hypothesized that younger adults would report more self-harming behaviors than older adults. A secondary purpose of this study was to provide some basic psychometric data regarding the use of the SHI with older adults, because we could locate no prior studies using the SHI with older adults. Finally, because men are known to have higher suicide completion rates than women, and women are known to have higher suicide attempt rates than men, we also explored potential gender differences regarding self-harm in this study.

Method

Participants and procedure

Younger adult college students ($N = 157$; M age = 20.5 years; range = 18 to 29 years; 69% women; 92% White/Caucasian) and community-dwelling older adults ($N = 124$; M age = 73.6 years; range = 64 to 92 years; 65% women; 94% White/Caucasian) participated in the study. Equivalency between the age groups on gender was demonstrated by a nonsignificant chi-square, $\chi^2(1, N = 280) = .44$, $p = .51$. Young adult participants were undergraduate psychology students at the University of Colorado at Colorado Springs (UCCS), who received extra credit for their participation. Older adult participants were recruited via an existing research database maintained by the UCCS Gerontology Center, comprised of older adults who voluntarily opted to be contacted about participation in research studies. All participants completed anonymously the questionnaire packet online through Survey Gizmo. The procedures, protocol, and informed consent for the present study were approved by the Institutional Review Board of UCCS.

Measure

The SHI (Sansone et al., 1998) is a widely used self-report measure that lists 22 diverse self-harming behaviors, answered no or yes, as well as an open-ended question ("Have you engaged in any other self-destructive behaviors not asked about in this inventory? If so, please describe below."). Each item is prefaced by the stem: "Have you ever intentionally, or on purpose, done any of the following?" Examples of some specific items include "hit yourself;" "abused alcohol;" "prevented wounds from healing;" and "abused prescription medication." Scores range from 0 to 22, with higher scores indicating more self-harming behaviors. The SHI has evidence of reliability of scale scores in diverse adolescent and adult populations. In a sample of 221 adults, the mean SHI score for those diagnosed with borderline personality disorder ($M = 10.15$; $SD = 4.6$) was significantly higher than mean scores for those without borderline personality disorder ($M = 2.30$; $SD = 2.5$) (Sansone et al., 1998). Also, SHI scores converged strongly with both the Diagnostic Interview for Borderlines ($r = .76$, $p < .01$, $N = 221$) and the Personality Diagnostic Questionnaire ($r = .73$, $p < .01$, $N = 221$). The SHI has been effectively used in diverse clinical samples, including psychiatric inpatients (Sansone, Songer, & Sellbom, 2006) and nonclinical younger adult college samples (e.g., Latimer, Covic, Cumming, & Tennant, 2006). It typically takes 5 min or less for respondents to complete the SHI. A limitation is that no prior data were available about the psychometric properties of the SHI with community-dwelling or treatment-seeking older adult respondents.

Results

Internal consistency (Cronbach's alpha) for the SHI total score was good among the younger adult (.86) and older adult (.79) groups. Results from a 2 (age group) × 2 (gender) factorial analysis of variance showed a significant main effect for age such that younger adults ($M = 3.42$, $SD = 3.86$) had higher SHI total scores than older adults ($M = 1.58$, $SD = 2.35$), $F(1, 251) = 17.89$, $p < .001$), with a medium effect size (partial $\eta^2 = .07$) indicating that 7% of the variance in SHI total scores was explained by age. A 95% confidence interval on the difference between these two means (1.84) ranged from 1.08 to 2.61.

It is important to note that the mean values for the SHI total score were low for both age groups, as to be expected in the nonclinical samples. Younger adults on average endorsed only 3.5 of the 22 items whereas older adults on average endorsed only 1.5 of the 22 items. Items that were more likely endorsed by young people included cutting, burning, hitting, head-banging, abusing alcohol, scratching, preventing wounds from healing, worsening medical situations, setting oneself up to be rejected, abusing prescriptions, purposefully exercising an injury, torturing oneself with self-defeating thoughts, and starving (see Table 1).

Although not a scorable item, at the end of the SHI respondents had an open-ended question about other

Table 1. Self-Harm Inventory (SHI) chi-square results and item response frequencies among younger adults and older adults.

				Younger adults		Older adults	
Item #	Content	χ^2	*p*	% "No"	% "Yes"	% "No"	% "Yes"
1	Overdosed	0.00	.95	92.9	7.1	92.7	7.3
2	**Cut yourself on purpose**	27.45	.00	76.4	23.6	98.4	1.6
3	**Burned yourself on purpose**	13.28	.00	89.7	10.3	100	0.0
4	**Hit yourself**	4.31	.04	84.7	15.3	92.7	7.3
5	**Banged your head on purpose**	11.45	.00	80.3	19.7	94.3	5.7
6	**Abused alcohol**	11.81	.00	63.7	36.3	82.3	17.7
7	Driven recklessly on purpose	3.14	.08	77.6	22.4	86.0	14.0
8	**Scratched yourself on purpose**	20.63	.00	79.0	21.0	97.5	2.5
9	**Prevented wounds from healing**	10.16	.00	88.5	11.5	98.4	1.6
10	**Made medical situations worse**	7.94	.01	91.7	8.3	99.2	0.8
11	Been promiscuous	0.00	.98	78.8	21.2	78.7	21.3
12	**Set yourself up in a relationship to be rejected**	5.76	.02	87.8	12.2	95.9	4.1
13	**Abused prescription medication**	5.01	.03	89.8	10.2	96.7	3.3
14	Distanced yourself from God as punishment	0.08	.78	88.4	11.6	89.4	10.6
15	Engaged in emotionally abusive relationships	2.65	.10	86.6	13.4	92.7	7.3
16	Engaged in sexually abusive relationships	1.20	.27	97.5	2.5	99.2	0.8
17	Lost a job on purpose	0.13	.72	93.6	6.4	92.5	7.5
18	Attempted suicide	0.61	.44	89.2	10.8	91.9	8.1
19	**Exercised an injury on purpose**	10.21	.00	82.8	17.2	95.2	4.8
20	**Tortured yourself with self-defeating thoughts**	18.87	.00	65.4	34.6	87.9	12.1
21	**Starved yourself to hurt yourself**	11.23	.00	86.0	14.0	97.5	2.5
22	Abused laxatives to hurt yourself	0.72	.40	96.8	3.2	98.4	1.6

Note: Bolded items indicate significant age-differences.

types of self-harm. On this question, younger adults were 2 times more likely to respond affirmatively (younger adults, 22% of the sample; older adults, 10%). There were no apparent differences in content between the two age groups but the responses included diverse behaviors such as smoking, hitting walls, binge eating, intentionally seeking physical conflict, heroin abuse, and excessive spending.

Discussion

This study examined age-related differences in self-harming behaviors, using a popular self-report assessment tool. As expected, older adults reported fewer self-harming behaviors than did younger adults. The current findings are wholly consistent with prior findings that older adults generally report lower rates of suicidal thinking than younger populations (Van Orden & Conwell, 2015), despite higher completed suicide rates. One possible explanation for this apparent discrepancy is that although suicidal thinking among older adults is relatively uncommon, when older adults act on their suicidal impulses, the subsequent attempts are typically dangerous and more often result in death than attempts by younger persons (Chan, Draper, & Banerjee, 2007). Moreover, older adults tend not to communicate to others about their suicidal intentions, which further serves to increase the seriousness of attempts and subsequent likelihood of death among older adults who attempt suicide (Van Orden & Conwell). Put another way, older adults typically express their suicidal impulses through serious and deadly suicide attempts rather than by demonstrating less severe forms of behavior on the suicidal spectrum, including self-harming behaviors without the intent to die.

Because the present study was cross-sectional in nature, we wish not to confuse age-differences with age-related changes. It is fair to conclude from the present study that important age-differences in self-harming behavior exist between the current cohorts of older adults and younger adults, but we cannot conclude that self-harming behaviors decrease with age. Cohort effects are also likely to play a role in the present findings. Certainly, we cannot rule out the possibility that some older adults in the present sample may have been reluctant to disclose this type of personal information via online responding, about which many in the current cohort of older adults are unfamiliar. In addition, it is already suspected that individuals in the Baby Boomer cohort are bringing with them higher rates of mental disorders into later life (Segal, Qualls, & Smyer, 2011). The current cohort of older adults have relatively lower rates for most mental disorders than the current cohort of younger adults, but this fact may change in the coming decades. Indeed, an important area for future investigation would be initiation of longitudinal studies of self-harming behaviors to determine the formal trajectories of self-harm behaviors across the life-span.

Although speculative, we offer a few distinct possibilities for these trajectories. The most common pattern would be self-harm behaviors that start relatively early in life, usually by late adolescence, that simply continue into later life. A variant would be self-harm that begins

relatively early in life, disappears for some period of time, and then re-emerges in later life, usually attributed to new and serious stressors common to old age that overwhelm the person's ability to cope more effectively (Segal et al., 2011). A third variant would be the emergence of self-harm behaviors de novo in later life, which is certainly possible but likely not very common. Although formal longitudinal studies of these trajectories for self-harm are needed, these similar patterns have been found for many other mental health problems including substance abuse, depression, anxiety disorders, and personality disorders (Segal et al., 2011).

The fact that the SHI was not developed as an elder-specific measure brings up yet another important consideration. Indeed, few older adults were included in the original validation samples described by Sansone et al. (1998). Although younger adults endorsed more self-harming behaviors than older adults on the SHI, it is possible that the SHI measure does not capture the full extent and nature of self-harming behaviors among older adults. Researchers have consistently reported that the unique context of later life often changes the expression of some symptoms of mental disorders in later-life, most notably depression (Fiske, Wetherell, & Gatz, 2009), anxiety (Tampi & Tampi, 2014; Wuthrich, Johnco, & Wetherell, 2015), and personality disorders (Balsis, Segal, & Donahue, 2009). Elder-specific assessment measures of psychopathology are preferable for use with older adults, to the extent the measures exist and have solid evidence for validity among representative samples of older adults (Edelstein et al., 2008). We believe that the development of an elder-specific measure of self-harming behaviors should be an important future research direction. Future research should also examine specific behaviors of older adults who self-harm more frequently and explore relationships between self-harming behaviors and other risk and resiliency factors for elder suicide.

A potential age-related issue with the SHI specifically is that it asks if the respondent "ever engaged" in the specified behaviors. With this type of wording, an older person might respond yes to an item, even if the behavior occurred many years earlier in the person's life but is no longer a problem. Researchers and clinicians using the SHI should be aware of this time frame for responding and alter the measure accordingly for their purposes.

Strength of the present study were the assessment of specific and diverse self-harming behaviors using a popular and standardized assessment measure and inclusion of reasonably sized samples of younger and older adults. These strengths notwithstanding, several limitations are important to note. First, the study was comprised of fairly homogeneous, nonclinical Caucasian samples with little ethnic diversity. Clearly, studies of self-harm behaviors in diverse minority samples, including diverse treatment-seeking and psychiatric samples, are sorely needed. We do not know the extent to which the present findings would be similar with more severe samples of participants, so the generalizability of the present findings is limited. Second, because we did not screen for cognitive impairments, it is possible that some older adults reported fewer of the self-harm items because they either forgot or reevaluated their self-harming behaviors from earlier in life. This issue of retrospective reporting of potentially stigmatized behaviors is deserving of further research. Finally, we used only one measure of self-harm, which was based on self-report. Inclusion of in-depth clinical interview assessments and behavioral assessments of self-harming behaviors are needed to replicate and extend the current findings and to illuminate potentially important contextual factors that impact self-harm, in community and clinical samples. Some of these factors might include life stage, stressors, social support, coping styles, substance use and abuse, trauma, and comorbid psychopathology, among others. Personality pathology should definitely be studied in regards to self-harm among older adults because maladaptive personality traits have been extensively linked to suicidal ideation in later life (Segal, Gottschling, Marty, Meyer, & Coolidge, 2015; Segal, Marty, Meyer, & Coolidge, 2012).

From a clinical perspective, we concur with a prudent recommendation (Klonsky, 2007) that clinicians working with self-harming individuals include a functional assessment as part of a thorough evaluation of self-harming behaviors. Understanding the possible rewards that one receives from engaging in specific self-harming behaviors can lead to more effective behavioral interventions, including individuals in later life. Indeed, replacement skills training in which the self-harming individual learns to replace self-harming behaviors with more adaptive behaviors that serve the same function for the individual is known to be an effective behavioral strategy for adolescents and adults (Williams & Segal, in press), although specific studies with older adults are lacking. Helping those who self-injure to develop new strategies for emotion regulation is critical, as this is a common function of deliberate self-harm (Walsh, 2007). More generally, intervention studies that elucidate a range of strategies and treatment packages to reduce self-harm in older adults are clearly needed. Community-based interventions may be especially useful to target those who engage in self-harming behaviors but do not seek clinical attention. Now that Nonsuicidal Self-Injury Disorder has been included as a distinct diagnosis in

DSM-5, the time is ripe for a burgeoning of clinical research on self-harm throughout the life-span.

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