

Stigma and Health

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Men are more likely to take their own lives, but less likely to seek professional help when they are depressed, especially as they age. Important determinants of help-seeking are perceived public and self-stigma concerning depression and suicide. Yet little research has explored sex and age differences in public stigma of men's depression and suicide, and in self-stigma of depression. Our study examined this neglected topic with a nationally representative survey of 452 male and 449 female ($N = 901$) Canadian adults ranging in age from 18–83. We examined age (18–34; 35–49; 50–64; 65+) and sex differences in public stigma of men's depression, public stigma of men's suicide, and self-stigma. Results demonstrated that, as expected, men were more likely to endorse most aspects of public stigma of men's depression and suicide. Our data also showed that public stigma was highest in younger adults, with young men demonstrating especially high levels. Our hypotheses that self-stigma would be largely independent of sex, and higher in younger adults, were also confirmed. In conclusion, although young men endorsed the highest levels of public stigma, overall levels of public stigma were low. This suggests that antistigma efforts to increase the use of mental health services might be most effective with a focus on self-stigma in young men and women.

Keywords: public stigma, self-stigma, men, gender, age

Recent research examining stigma in relation to depression and suicide in men has focused on help-seeking behaviors and decisions (Best, Gil-Rodriguez, Manktelow, & Taylor, 2016; Syzdek, Green, Lindgren, & Addis, 2016; Vogel, Wester, Hammer, & Downing-Matibag, 2014; Wahto & Swift, 2016), depression and suicide prevention and intervention programs (Hackler, Cornish, & Vogel, 2016; Wang et al., 2016), and the socialization and social construction of masculinities (Boysen, 2016; Cleary, 2012; Vogel & Heath, 2016). Relatively less research, however, has examined whether sex affects stigma related to men's depression and suicide (Dahlen & Canetto, 2002; Oliffe et al., 2016). Likewise, whereas extensive research has examined stigma among younger adults (e.g., Evans-Lacko et al., 2013) and, to a lesser extent, older adults (e.g., Stewart, Jameson, & Curtin, 2015) very little research has

examined age differences in stigma, especially in relation to men's depression and suicide (Wang et al., 2016). Enhancing our understanding of sex differences in stigma across the adult life span is important given the reliable influence of stigma on help-seeking (Clement et al., 2015; Cook & Wang, 2010), and the fact that while men are more likely to suicide than women (Bilsker & White, 2011; Nock et al., 2008) they are less likely to seek professional help when they are depressed (Addis & Mahalik, 2003; Galdas, Cheater, & Marshall, 2005; Sierra Hernandez, Han, Oliffe, & Ogrodniczuk, 2014), especially as they age (Mackenzie, Reynolds, Cairney, Streiner, & Sareen, 2012).

When discussing stigma concerning mental illness, it is critical to do so with conceptual clarity given the problems associated with referring to stigma as an all-encompassing concept when it has been shown to be multifaceted (National Academies of Sciences, Engineering, & Medicine, 2016; Corrigan, 2004). This study focuses on two aspects of stigma. First, public stigma (i.e., externalized stigma) refers to negative attitudes (i.e., prejudices), beliefs (i.e., stereotypes) and behaviors (i.e., discrimination) concerning others in society who have mental health problems such as depression and suicide. Second, self-stigma (i.e., internalized stigma) refers to prejudice, stereotypes, and discrimination concerning one's own mental health problems (Corrigan, 2004). Public and self-stigmata are thought to be linked, whereby public stigma can become internalized, resulting in greater self-stigma (Latalova, Kamaradova, & Prasko, 2014; National Academies of Sciences, Engineering, & Medicine, 2016; Vogel, Wade, & Hackler, 2007).

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The present study examines sex and age differences in both, with a focus on men's depression and suicide.

Sex Differences in Mental Illness Stigma

Research examining the effects of traditional masculine ideals on stigma has demonstrated that individuals who endorse traditional masculine norms such as stoicism, self-reliance, and restricted emotionality (e.g., boys do not cry) report higher levels of self-stigma (Latalova et al., 2014) and have more negative help-seeking attitudes, intentions, and behaviors (Seidler, Dawes, Rice, Oliffe, & Dhillon, 2016; Vogel, Heimerdinger-Edwards, Hammer, & Hubbard, 2011). It stands to reason, therefore, that men should also be more likely to endorse public stigma concerning depression and suicide, and this appears to be the case. Men's greater likelihood of endorsing public stigma concerning depression has been reported in large national samples in Canada (Wang, Fick, Adair, & Lai, 2007), Australia (Griffiths, Christensen, & Jorm, 2008), and Germany (Dietrich, Mergl, & Rummel-Kluge, 2014). A recent systematic review of quantitative and qualitative studies of mental illness-related stigma, which focused on public stigma and treatment stigma, also found that men tended to report greater public stigma (Clement et al., 2015). In the only study we are aware of examining associations between sex and public stigma concerning depression and suicide in men, Oliffe et al. (2016) found that men endorsed greater stigma on eight of nine items on a measure of public stigma of men's depression. They also reported significant sex differences on 12 of 16 items from a measure of public stigma of men's suicide. Although on most of the items men scored higher (i.e., greater stigma), women scored higher on four items where they saw men who take their own lives as being lonely, isolated, lost, and disconnected.

Data are less conclusive with respect to whether similar sex differences in public stigma are also seen in self-stigma. A systematic review and meta-analysis by Livingston and Boyd (2010) found no clear association between sex and self-stigma. Of the 38 studies that examined this association, 31 (82%) reported nonsignificant effects of sex. It is possible that mixed results concerning sex differences in self-stigma may be due to its multifactorial nature. Tucker et al. (2013) demonstrated that self-stigma concerning mental illness and seeking help are conceptually distinct. Using their Self Stigma of Depression Scale, which assesses different facets of stigma including self-stigma of seeking help, Barney, Griffiths, Christensen, and Jorm (2010) found that women reported greater self-stigma than men with the exception of men reporting greater self-stigma concerning seeking help. Similarly, Oliffe et al. (2016) found few sex differences on 12 items from a measure of self-stigma of depression, but on the four items where sex differences emerged, women scored higher on two social stigma items and men scored higher on two help-seeking stigma items.

Age and Mental Illness Stigma

Older adults (i.e., ≥ 65 years old) are commonly assumed to experience greater stigma concerning mental health problems and treatments than younger adults. Indeed, the Surgeon General's report on mental health (U.S. Department of Health and Human Services, 1999) pointed to stigma as a powerful obstacle for older adults, and Katona and Livingston (2000) stated in their Lancet

commentary that "stigma of mental illness is perhaps the most fundamental reason why elderly people are not treated" (p. 91). Data addressing this issue, however, are mixed and tend not to support this notion. Regarding public stigma, some studies have found greater public stigma toward mental disorders among younger adults (Crisp, Gelder, Goddard, & Meltzer, 2005; Fogel & Ford, 2005; Sirey et al., 2001), other studies have reported the opposite (Dietrich et al., 2014; Griffiths et al., 2008), whereas others have found no consistent effects of age (Cook & Wang, 2010; Moss-Racusin & Miller, 2016). Clement et al.'s (2015) metasynthesis found that public stigma was greater among younger adults. Research on this topic has not yet, to our knowledge, examined the effect of age on public stigma concerning suicide and depression specifically in men.

Regarding self-stigma, Livingston and Boyd's (2010) systematic review and meta-analysis found that age had no overall significant association with self-stigma. Nearly two thirds (63.6%) of studies in this review reported greater levels of self-stigma toward mental illness among younger groups in comparison to older groups. The suggestion that self-stigma decreases modestly with age was supported by Barney et al. (2010) who found this pattern on four aspects of self-stigma of depression (i.e., self-blame, shame, help-seeking inhibition, and social inadequacy).

The objectives of the current study are to explore the influences of sex and age on: (a) public stigma concerning men's depression, (b) public stigma concerning men's suicide, and (c) self-stigma concerning depression in a nationally representative sample of Canadian adults. Using the same data that Oliffe et al. (2016) used to examine item-level sex differences in public and self-stigma, we hypothesize that their significant sex findings (i.e., men being more likely to report greater public stigma of men's depression, men being more likely to report that men's suicide is stigmatized and glorified, men being more likely to report self-stigma of seeking help, women being more likely to report that public stigma of men's suicide is related to depression/isolation, and women being more likely to report self-stigma of depression related to social inadequacy) will be qualified by age, such that younger adults will report greater public stigma related to men's depression and suicide and, to a lesser degree, self-stigma.

Method

Participants and Recruitment Procedures

For more detail concerning methodological information, see Oliffe et al. (2016). A total of 901 respondents participated in this online survey study, and descriptive information about the sample can be found in Table 1. The online panel provider Research Now Canada recruited and screened eligible participants—those who were 18-years-old and older, had online access, and were able to read in English. Consenting participants completed an 8-minute online survey about men's health, depression, and suicide. Participants were from both Western ($N = 456$) and Eastern ($N = 445$) parts of Canada, ranged in age from 18–83 year with a mean age of 44.78 years ($SD = 15.92$), and 50.2% were male. The sample was stratified and weighted to ensure that it reflected the general Canadian population. Participants who took part in the survey received points redeemable for rewards from the online panel provider. Monitoring of participant IP addresses ensured that each

Table 1
Descriptive Statistics of Sociodemographic Factors for the Total Sample and by Age Group

Variable	Overall	Age group				Chi-square		
		18–34	35–49	50–64	65–83	χ^2	df	V
Mean (SD) Age ($N = 900$)	44.78 (15.92)	27.38 (3.96)	42.05 (3.83)	56.63 (4.15)	69.56 (3.95)	n/a	n/a	n/a
Male ($n = 452$)	452 (50%)	155 (48%)	102 (52%)	132 (52%)	63 (49%)	1.51	3	.04
Education ($n = 890$)	890 (100%)	319 (36%)	194 (22%)	250 (28%)	127 (14%)	37.06*	6	.14
High school or less	350 (39%)	116 (36%)	54 (28%)	109 (44%)	71 (56%)			
College/trade school	197 (22%)	67 (21%)	45 (23%)	66 (26%)	19 (15%)			
University degree	343 (39%)	136 (43%)	95 (49%)	75 (30%)	37 (29%)			
Living arrangement ($n = 888$)	888 (100%)	319 (36%)	191 (22%)	250 (28%)	128 (14%)	76.19*	3	.29
Married/common-law	589 (66%)	153 (48%)	144 (75%)	197 (79%)	95 (74%)			
Single	299 (34%)	166 (52%)	47 (25%)	53 (21%)	33 (26%)			
Employment status ($n = 892$)	892 (100%)	322 (36%)	192 (22%)	252 (28%)	126 (14%)	193.14*	6	.33
Full-time	489 (55%)	202 (63%)	146 (76%)	126 (50%)	15 (12%)			
Part-time	102 (11%)	38 (12%)	21 (11%)	37 (15%)	6 (5.0%)			
Not employed	301 (34%)	82 (26%)	25 (13%)	89 (35%)	105 (83%)			
Total household income before taxes ($n = 806$)	806 (100%)	298 (37%)	171 (21%)	224 (28%)	113 (14%)	63.19*	9	.16
<\$40,000	159 (20%)	69 (23%)	17 (10%)	35 (16%)	38 (34%)			
\$40,000–<\$80,000	302 (38%)	129 (43%)	54 (32%)	76 (34%)	43 (38%)			
\$80,000–<\$140,000	250 (31%)	82 (28%)	71 (42%)	71 (32%)	26 (23%)			
≥\$140,000	95 (12%)	18 (6%)	29 (17%)	42 (19%)	6 (5%)			
Born in Canada ($n = 891$)	891 (100%)	320 (36%)	194 (22%)	252 (28%)	125 (14%)	14.12*	3	.13
Yes	757 (85%)	274 (86%)	151 (78%)	228 (91%)	104 (83%)			
No	134 (15%)	46 (14%)	43 (22%)	24 (10%)	21 (17%)			
Belonging to any distinct ethnic or cultural group ($n = 818$)	818 (100%)	297 (36%)	166 (20%)	236 (29%)	119 (15%)	3.60	3	.07
Yes	150 (18%)	61 (21%)	34 (21%)	35 (15%)	20 (17%)			
No	668 (82%)	236 (80%)	132 (80%)	201 (85%)	99 (83%)			

Note. All sociodemographic values are unweighted. The subsample n is reported when different from the total sample size. n/a = not applicable.

* $p < .01$.

respondent was unique. This study was approved by a Research Ethics Board at the University of British Columbia.

Participants completed different survey questions depending on whether or not they had direct personal experience with depression or suicide. Only the 541 participants (281 men and 260 women) without previous experience completed public stigma measures, whereas only the 360 participants (171 men and 189 women) with previous experience completed the self-stigma measure described in the following section.

Survey

The survey assessed general sociodemographic information and focused on the following four topics: (a) awareness and diagnoses concerning men's depression, (b) men's depression and suicide literacy, (c) stigma concerning men's depression and suicide, and (d) prevention of men's depression and suicide. The current study focused on participants' responses to items concerning public stigma and related to men's depression and suicide, as well as self-stigma.

Measures

Depression Stigma Scale (DSS). Participants who have never been diagnosed with depression, treated for depression, or attempted suicide completed the personal stigma subscale from the Depression Stigma Scale to measure public stigma (Griffiths, 2014). The personal stigma subscale of the DSS measures public

stigma with nine items rated on a 5-point scale with higher scores indicating greater levels of stigma. We modified the items from this subscale to refer to men's depression (e.g., we changed "People with depression could snap out of it if they wanted," to "Men with depression could snap out of it if they wanted"). Cronbach's alpha in the current sample was .87.

Stigma of Suicide Scale (SOSS). Participants who have never been diagnosed or treated for depression and have never considered or attempted suicide completed the Stigma of Suicide Scale to measure public stigma (SOSS; Batterham, Cleave, & Christensen, 2013a). The SOSS measures perceived public stigma with 16 items rated on a 5-point scale with higher scores indicating greater stigma. The total scale is comprised of three subscales: (a) an eight-item stigma subscale (e.g., people who suicide are an embarrassment); (b) a four-item isolation/depression subscale (e.g., people who suicide are lonely); and (c) a four-item glorification/normalization subscale (e.g., people who suicide are brave). We modified the original instruction to refer to public stigma of men's suicide (e.g., we changed "In general, people who suicide are: ____" to "In general, men who suicide are: ____." Cronbach's alphas in the current sample were .93 for the stigma subscale, .85 for the isolation/depression subscale, .85 for the glorification/normalization subscale, and .82 for the overall scale.

Self-Stigma of Depression Scale (SSDS). Participants who have been diagnosed or treated for depression or who have ever considered or attempted suicide completed the Self-Stigma of Depression Scale to measure self-stigma (SSDS; Barney et al.,

2010). The SSDS measures self-stigma with 16 items rated on a 5-point scale with higher scores indicating greater stigma. The total scale is comprised of four subscales: (a) shame (e.g., I would feel embarrassed); (b) self-blame (e.g., I would think I should be stronger); (c) help-seeking inhibition (e.g., I would feel embarrassed about seeking professional help for depression); and (d) social inadequacy (e.g., I would feel inadequate around other people). We modified the SSDS by using 12 of the 16 original items, omitting two of four items from the shame subscale, one of four items from the self-blame subscale, and one of four items from the social inadequacy subscale because they were deemed redundant with other items in the survey (Olfiffe et al., 2016). Cronbach's alphas in the current sample were .67 for the shame subscale, .71 for the self-blame subscale, .81 for the help-seeking inhibition subscale, .61 for the social inadequacy subscale, and .86 for the overall scale.

Data Analysis

The data are nationally representative and weighted according to the 2011 Canadian Census for age, sex, and provincial region (Western provinces vs. Eastern provinces). We analyzed and reported sociodemographic information without survey weights, and applied the weights in all other analyses. We categorized age into four groups: 18–34, 35–49, 50–64, and 65–83 years old. We

computed subscale and total scores for each stigma measure and report mean scores and standard deviations as scale averages (i.e., total scores divided by number of items).

We examined sex and age differences in the single-factor DSS with a one-way analysis of variance (ANOVA), and in the subscales of the SOSS and SSDS with two, 2 (Sex: male, female) $\times$ 4 (Age Groups: 18–34, 35–49, 50–64, 65–83) multivariate analyses of variance (MANOVAs). Significant interactions were followed with post hoc LSD tests. We report mean scores and standard deviations in Table 2, and the results of our univariate and multivariate analyses in Table 3. In addition to indicators of statistical significance, we also report partial eta squared (η_p^2) as a measure of the size of our effects where values close to .01 are considered small, .06 are considered moderate, and .14 are considered large (Cohen, 1988). All analyses were conducted using SPSS (Version 22).

Results

Age and Sex Differences in Public Stigma of Men's Depression

As shown in Table 3, the ANOVA of sex and age differences in public stigma toward men's depression revealed a univariate

Table 2
Means and Standard Deviations of Stigma Scores by Age and Sex

Variable	Overall	Age group			
		18–34	35–49	50–64	65–83
DSS overall (range 1–5)	2.12 (.63)	2.14 (.79)	2.15 (.63)	2.12 (.55)	2.05 (.50)
Male	2.29 (.68)	2.49 (.88)	2.27 (.65)	2.24 (.58)	2.15 (.55)
Female	1.92 (.50)	1.85 (.57)	1.96 (.56)	1.95 (.43)	1.96 (.41)
SOSS overall (range 1–5)	2.66 (.51)	2.72 (.57)	2.77 (.45)	2.59 (.48)	2.54 (.47)
Male	2.74 (.50)	2.80 (.54)	2.82 (.49)	2.67 (.50)	2.66 (.42)
Female	2.56 (.50)	2.65 (.59)	2.68 (.37)	2.47 (.42)	2.43 (.50)
Stigma	2.24 (.80)	2.33 (.87)	2.43 (.79)	2.14 (.75)	2.01 (.71)
Male	2.41 (.82)	2.47 (.91)	2.61 (.79)	2.31 (.80)	2.20 (.76)
Female	2.03 (.72)	2.21 (.83)	2.13 (.72)	1.88 (.60)	1.81 (.60)
Isolation/depression	3.67 (.82)	3.63 (.91)	3.81 (.80)	3.59 (.79)	3.68 (.75)
Male	3.58 (.85)	3.36 (1.07)	3.74 (.87)	3.56 (.73)	3.67 (.66)
Female	3.77 (.77)	3.86 (.68)	3.90 (.68)	3.64 (.86)	3.70 (.83)
Glorification/normalization	2.50 (.78)	2.58 (.93)	2.41 (.73)	2.50 (.69)	2.48 (.75)
Male	2.56 (.80)	2.91 (.98)	2.31 (.72)	2.52 (.71)	2.56 (.67)
Female	2.43 (.75)	2.32 (.78)	2.56 (.72)	2.47 (.66)	2.41 (.83)
SSDS overall (range 1–5)	3.60 (.67)	3.77 (.68)	3.77 (.56)	3.45 (.63)	3.28 (.72)
Male	3.59 (.63)	3.64 (.71)	3.80 (.50)	3.50 (.66)	3.28 (.51)
Female	3.61 (.70)	3.84 (.66)	3.74 (.63)	3.41 (.60)	3.28 (.85)
Shame	3.79 (.85)	3.88 (.88)	4.03 (.79)	3.70 (.78)	3.41 (.85)
Male	3.77 (.79)	3.68 (.86)	4.02 (.73)	3.80 (.77)	3.39 (.66)
Female	3.81 (.89)	3.99 (.88)	4.03 (.84)	3.63 (.78)	3.42 (.98)
Self-blame	3.61 (.83)	3.74 (.82)	3.83 (.80)	3.47 (.74)	3.25 (.92)
Male	3.56 (.77)	3.56 (.88)	3.75 (.56)	3.53 (.81)	3.25 (.79)
Female	3.65 (.87)	3.84 (.77)	3.92 (.98)	3.43 (.70)	3.24 (1.02)
Help-seeking inhibition	3.33 (.92)	3.58 (.89)	3.44 (.89)	3.14 (.89)	2.96 (.95)
Male	3.45 (.86)	3.65 (.88)	3.66 (.69)	3.27 (.89)	3.02 (.86)
Female	3.24 (.96)	3.54 (.89)	3.23 (1.02)	3.04 (.88)	2.92 (1.03)
Social inadequacy	3.84 (.73)	3.97 (.77)	3.98 (.74)	3.68 (.67)	3.67 (.64)
Male	3.70 (.69)	3.68 (.69)	3.90 (.67)	3.58 (.73)	3.59 (.58)
Female	3.94 (.74)	4.13 (.77)	4.05 (.79)	3.75 (.62)	3.72 (.69)

Note. Stigma score standard deviations are reported in parentheses. DSS = Depression Stigma Scale; SOSS = Stigma of Suicide Scale; SSDS = Self-Stigma of Depression Scale.

Table 3
Univariate and Multivariate Effects of Age and Sex on Stigma

Measure	Age		Sex		Age × Sex	
	<i>F</i>	η_p^2	<i>F</i>	η_p^2	<i>F</i>	η_p^2
DSS						
Univariate total score	.84 (3, 558)	.00	45.49 (1, 558)**	.08	3.39 (3, 558)*	.02
SOSS						
Multivariate test	3.26 (9, 1353)**	.02	15.57 (3, 556)**	.08	3.22 (9, 1353)**	.02
Stigma	6.85 (3, 558)**	.04	33.21 (1, 558)**	.06	.52 (3, 558)	.00
Isolation ^a	2.29 (3, 558)	.01	7.31 (1, 558)**	.01	2.36 (3, 558)	.01
Glorification ^b	1.38 (3, 558)	.01	4.13 (1, 558)*	.01	7.51 (3, 558)**	.04
SSDS						
Multivariate test	3.68 (12, 940)**	.04	6.12 (4, 355)**	.06	.97 (12, 940)	.01
Shame	6.64 (3, 358)**	.05	.23 (1, 358)	.00	1.61 (3, 358)	.01
Blame	7.09 (3, 358)**	.06	.99 (1, 358)	.00	1.11 (3, 358)	.01
Help-seeking inhibition	7.69 (3, 358)**	.06	4.87 (1, 358)*	.01	.61 (3, 358)	.01
Social inadequacy	4.63 (3, 358)**	.04	8.07 (1, 358)**	.02	1.07 (3, 358)	.01

Note. *F* values are reported with degrees of freedom within parentheses. Multivariate tests are reported as Wilks' Lambda. DSS = Depression Stigma Scale; SOSS = Stigma of Suicide Scale; SSDS = Self-Stigma of Depression Scale.

^a Isolation/depression subscale. ^b Glorification/normalization subscale.

* $p < .05$. ** $p < .01$.

main effect of sex and an interaction between sex and age on the DSS total score. For the main effect of sex, Table 2 demonstrates that, as we predicted, males reported higher levels of public stigma toward men's depression than females. For the interaction between sex and age, post hoc tests revealed no significant age group differences for women (all $t_s < .10$ and $p_s > .32$). In comparison, for men the youngest group had significantly greater public stigma than all other age groups (all $t_s > .22$ and all $p_s < .03$).

Age and Sex Differences in Public Stigma of Men's Suicide

The MANOVA of sex and age differences in the three public stigma toward men's suicide factors revealed a significant multivariate main effect of sex, a significant multivariate main effect of age, and a significant multivariate interaction between sex and age (see Table 3).

Follow-up univariate analyses for sex showed that it had a consistent significant effect on all three subscales of the SOSS. Mean scores in Table 2 demonstrate that for the stigma subscale men reported greater public stigma toward men's suicide than women. Similarly, men scored higher on the normalization/glorification subscale (they were more likely than women to report that men who take their own lives are strong, brave, noble, and dedicated). In contrast, for the isolation/depression subscale, women were more likely to report that men who suicide are isolated or depressed.

Follow-up univariate analyses for age summarized in Table 3 demonstrated that it had a significant main effect only on the Stigma subscale. Post hoc pairwise comparisons revealed that the youngest two age groups were not different from one another, $t = .03$, $p = .74$. Similarly, the two oldest age groups were not different from one another, $t = .09$, $p = .35$. The two youngest age groups reported greater public stigma of suicide than the two oldest age groups ($t_s > .24$, $p_s < .01$).

Follow-up tests of the multivariate interaction revealed that age and sex only had a significant univariate interaction effect for the glorification/normalization subscale of the SOSS (see Table 3). For females, age had no effect, $t_s < .25$, $p_s > .07$. In contrast, for males the youngest age group (18–34) reported greater glorification concerning men's suicide than all other older age groups, $t_s > .35$, $p_s < .02$, and none of the other age comparisons significantly differed from one another, $t_s < .25$, $p_s > .06$.

Age and Sex Differences in Self-Stigma of Depression

As summarized in Table 3, the MANOVA of sex and age differences in self-stigma of depression revealed a significant multivariate main effect of sex and a significant multivariate main effect of age. The interaction between sex and age was not significant.

In terms of sex, univariate analyses were significant for two of the three subscales. Men scored higher on the help-seeking inhibition subscale than women. In contrast, women scored higher than men on the social inadequacy subscale. In terms of age, univariate analyses showed that age had a consistent and significant influence on all four subscales. The general pattern of means from Table 2 that are depicted in Figure 1 is that self-stigma subscale scores decreased across the four age groups. With the exception of the shame subscale, post hoc comparisons across the four age groups revealed nonsignificant differences between the two youngest groups $t_s < .15$, $p_s > .24$. Similarly, with the exception of shame, post hoc comparisons across the four age groups revealed nonsignificant differences between the two oldest groups $t_s < .24$, $p_s > .14$. The vast majority of post hoc analyses (available from the authors) comparing the two youngest groups with the two oldest age groups were significant.

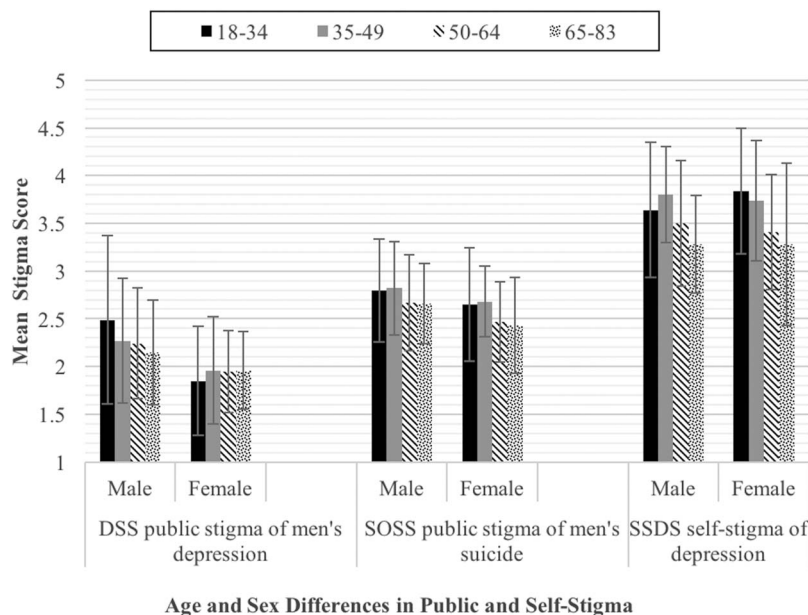


Figure 1. Mean public stigma of men's depression (DSS) and suicide (SOSS), and self-stigma (SSDS) stigma scores across the adult life span. Stigma values range from 1 to 5, with higher scores indicating greater stigma. Error bars represent standard deviations.

Discussion

The primary objective of this study was to examine the influence of sex and age on public stigma concerning men's depression and suicide, as well as on the self-stigma of depression. This study expands on Oliffe et al. (2016) item-level analysis of sex differences in public and self-stigma by exploring whether total and subscale scores vary between men and women across the adult life span. Understanding sex and age differences in various aspects of public and self-stigma is important considering that men and older adults use disproportionately fewer mental health services (Addis & Mahalik, 2003; Kim, Cho, Park, & Park, 2015; Mackenzie, Gekoski, & Knox, 2006) and because public and self-stigma have reliable negative influences on help-seeking for mental health problems (Clement et al., 2015).

With respect to public stigma toward men's depression, previous research has been remarkably consistent in showing that men tend to report more of this kind of stigma than women (Clement et al., 2015). Our findings provide additional support for this finding, and also add to it by showing that sex interacted with age such that young men reported the highest level of public stigma concerning depression in men. It is important to note, however, that even among young men, endorsement of public stigma was well below the midpoint of our stigma scale—indicating low overall levels of public stigma concerning men's depression among Canadians with no personal experience with depression or suicide.

With respect to public stigma of men's suicide, we expanded on Oliffe et al.'s (2016) item-level analysis by showing mixed effects of sex. Men reported greater stigma on the general stigma subscale (e.g., men who suicide are an embarrassment) and the subscale measuring the degree to which suicide is glorified and normalized (e.g., men who suicide are strong, noble). In contrast, women scored higher than men on the isolation/depression subscale (e.g.,

men who suicide are disconnected). We, once again, expected these stigma effects to be stronger in younger adults and found support for this hypothesis. In addition to an overall positive influence of age on stigma of men's suicide, age also interacted with sex with respect to glorifying and normalizing men's suicide. Age had no effect on this aspect of stigma for women but it had a positive effect for men such that, as was the case for public stigma of men's depression, public stigma of men's suicide was greatest among younger men. Our finding that males and younger age groups (in particular those aged under 50) endorse greater public stigma toward men's suicide aligns with previous research (Batterham, Calear, & Christensen, 2013b), although as was the case with public stigma of depression, public stigma of suicide scores were generally low in our sample.

Previous research, including a meta-analysis of self-stigma studies (Livingston & Boyd, 2010), lead us to expect that age would have a stronger impact on this aspect of stigma than sex, and that younger adults would be more likely to endorse self-stigma of depression. We found support for these hypotheses. Interestingly, although we found no sex differences on two of the four self-stigma subscales, sex had mixed effects on the other two scales. Our findings are consistent with previous research showing that women were more likely to endorse self-stigma related to social inadequacy (Barney et al., 2010) whereas men were more likely to endorse self-stigma related to seeking help (Mackenzie et al., 2006; Topkaya, 2014; Vogel, Wade, & Haake, 2006, 2014). These findings stress the importance of measuring distinct aspects of self-stigma rather than looking at it as a general construct. They also highlight the influence of gender roles—especially masculine norms that emphasize the importance of strength, self-reliance, and restricted emotionality—on men's lower rates of mental health service use (Berger, Levant, McMillan, Kelleher, & Sellers, 2005;

Seidler et al., 2016). With respect to the effects of age on self-stigma of depression among those with previous experience of depression or suicide, we replicated its consistent positive influence on each of the four self-stigma subscales (Barney et al., 2010). However, unlike the study by Barney et al. (2010) in which the effects of age were weak (with correlations ranging from .14 to .21 across the four self-stigma subscales), in the current study age had a robust effect on self-stigma with moderate effect sizes across each subscale (with partial eta squared values ranging from .04 to .06 across the four subscales). Finally, it is noteworthy that, in contrast to overall low levels of public stigma in this study, mean levels of self-stigma were noticeably higher. Although there are reasons why public stigma may be underreported in our sample, as discussed in the following paragraph, this finding suggests that self-stigma may be more of a concern than public stigma. If additional research supports this finding, self-stigma would be a more impactful target of antistigma interventions.

While this study has a number of strengths, including its large, nationally representative sample, its multifaceted approach to stigma, and its focus on men's depression and suicide, our findings should be considered in light of a number of limitations. First, this study focused on public stigma only among adults without a history of depression or suicide. It is possible that those with lived experiences of depression and/or suicide may be more sensitive to these experiences and therefore more likely to endorse public stigma concerning them, although Griffiths and colleagues (2008) found the opposite to be true. It is also possible that self-reports of public stigma may be especially vulnerable to social desirability effects. Both of these factors would have weakened the degree to which public stigma was reported in our study, leading us to be cautious when suggesting that the effects of self-stigma were stronger than the effects of public stigma. Second, this study focused on self-stigma only among those with a history of depression or suicide. In addition to the need for caution about generalizing our stigma findings to groups that we did not measure (e.g., public stigma among those who are depressed), it is important to note that we did not assess self-stigma of suicide in this study, nor did we assess the duration, severity, or current status of symptoms of depression, which could influence reports of self-stigma of depression. Second, with cross-sectional data our age effects simply refer to differences among age groups rather than to the effects of aging per se. We do not know, therefore, if stigma decreases as people age or if different age cohorts exhibit varying levels of stigma for other reasons (cohort or period effects). Finally, two of the public stigma of suicide subscales had internal consistencies that were below .70 and therefore considered inadequate (Cicchetti, 1994).

With these limitations in mind, two conclusions from this study are noteworthy. First, the effects of age in this study are both positive and negative. The positive message is that, without exception, older adults in this study reported lower levels of public and self-stigma than younger adults. This positive aging message runs counter to ageist assumptions of older adults being especially susceptible to stigma concerning mental disorders (e.g., U.S. Department of Health and Human Services, 1999) and it supports a growing body of research demonstrating that older adults are more likely than younger adults to have agreeable personalities (Roberts, Walton, & Viechtbauer, 2006; Srivastava, John, Gosling, & Potter, 2003), and to be open and willing to seek mental health services if

they need them (Mackenzie et al., 2006; Mackenzie, Scott, Mather, & Sareen, 2008). On the other hand, the negative message in our data is that young men had especially high levels of public stigma of male depression and suicide. Given that rates of suicide peak in both young men and older men (APA Working Group on Suicidal Behaviors, 2003), this finding highlights the importance of continuing efforts to combat public stigma, and of needing to focus on stigma among young men in particular. Such efforts might target masculine norms, that young men are particularly susceptible to, which suggest that mental illness and seeking help for it is associated with weakness (Chandra & Minkovitz, 2006). Second, although our public stigma findings highlighting concern about young men are important to consider, so too is our finding that overall levels of public stigma were generally low in our sample, and meaningfully lower than levels of self-stigma of depression. The consistent and strong effect of age on self-stigma in our study and in previous research suggests the importance of focusing on younger adults in this regard; specifically, if future research confirms our findings it would be worthwhile to target self-stigma concerns about help-seeking among young men, and self-stigma concerns about social inadequacy among young women. These kinds of focused antistigma efforts have significant potential not only for improving attitudes, but also for enhancing mental health service use for younger adults.

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