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Research paper

Gender similarities in somatic depression and in DSM depression secondary symptom profiles within the context of severity and bereavement

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ABSTRACT

Background: Most population studies report higher rates of depression among women than men, and some researchers have observed gender differences in depression symptoms overall, or in sub-groupings (e.g. somatic depression). However, gender symptom differences have been inconsistent, prompting this investigation of gender differences in secondary DSM symptom profiles in the context of bereavement status, age, and depression severity.

Methods: Individuals with symptoms of core depression (flat affect or anhedonia) were selected from a large survey of adults in the Alberta, Canada workforce. Analyses involved the comparison of gender profiles across the seven DSM-IV secondary depressive symptoms plus a MANOVA of sex, bereavement, and age, with secondary symptoms comprising the dependent variable.

Results: Gender profiles were very similar, irrespective of depression severity or bereavement. Secondary symptoms were marginally more common among women and more frequent among bereaved young adults, but there was no evidence for a gender-related somatic factor.

Limitations: First, data were gathered only for persons in the workforce and thus may not be generalizable to, for example, stay-at-home parents or those with employment issues. Second, the focus here is restricted to DSM symptoms, leaving risk factors, social roles, and brain functioning for separate investigation. Third, inferences were drawn from associations between groups of persons, rather than between individuals, requiring caution when speculating about individual attributes.

Conclusions: Gender differences in depression represent a difference in amount, not kind, suggesting that the range of depressive experiences is similar for men and women. There was no gender difference ascribable to somatic depression.

1. Introduction

The majority of epidemiological investigations of population depression over the last few decades have reported that rates of major depression are substantially higher among women in comparison to men (e.g. Weissman and Klerman, 1977; Robins et al., 1984; Bland et al., 1988; Kessler et al., 1993; Weissman et al., 1993). This has been corroborated in a pair of recent meta-analyses of international studies that showed that women consistently exhibited higher levels of depression than men (approaching twice the prevalence), whether measured by categorical DSM-like diagnoses or dimensional assessments (Salk et al., 2017).

The picture is not as clear for findings on depression-related symptoms which have shown disarray in the understanding of depression sub-types and symptoms. For example, Kendall and Brady (1995) have noted that two individuals could be assigned a DSM-IV diagnosis of major depressive episode (MDE) while holding in common only one of the nine candidate symptoms shown in Table 1, and Fried et al. (2014) have shown that these DSM symptoms are associated with differing risk factors. Furthermore, van Loo et al. (2012) were able to identify a wide diversity of symptom factors in their systematic review of studies on DSM-IV depression criteria, but they found little evidence for data-based symptom dimensions or subtypes. Middeldorp et al. (2006) found that among the DSM symptoms that they studied, only weight loss showed a sex difference. In contrast to the mixed findings on depression symptoms, there is greater consensus on clinical depression overall. Specifically, clinicians generally show good agreement on the global diagnosis of depression (Segal et al., 1994).

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Table 1
DSM-IV major depressive disorder symptoms (definitions abridged).

Core Symptoms	
Depression	Consistently depressed or down for two weeks
Anhedonia	Loss of interest in, or unable to enjoy, most activities for two weeks
Secondary Symptoms	
Low Energy	Low energy, frequently tired
Sleep	Oversleeping, insomnia, wakefulness
Appetite	Appetite or weight decrease or increase
Concentration	Problems concentrating or making decisions
Slow/Restless	Talk/move slowly, or were fidgety/restless
Guilt/Worthless	Feelings of low self-worth and/or guilt
Suicidality	Suicidal ideation, death wishes

For the purposes here, it is important to clarify one aspect of our use of the term "symptom". Salk et al. (2017) as cited above, use the phrase "diagnoses and symptoms" when describing the two foci of their meta-analyses. The operational distinction, though, can be better viewed as pertaining to categorical diagnoses and dimensional forms of assessment, respectively, since (1) they are described that way, and (2) each contains elements of both depression and symptomatic behaviour. For example, recent DSM versions use nine ostensible symptoms (see Table 1), but the only measures of depression among them are the first two (two weeks of either depressed mood or anhedonia). The remaining seven are certainly behaviours that depressed people often display, but they do not represent depression per se, nor are they exclusive to major depression. To clarify our use here, which pertains to DSM-IV data, we refer to the presence of depressed mood and/or anhedonia as "core depression" and to the remaining seven items as "secondary symptoms" (i.e. consequences of, or risk factors for, depression).

Here, we address this issue by focusing on gender differences in the profile of DSM secondary depression symptoms. In this vein, several factors related to gender differences in depression have been noted in the literature that may help to provide a useful framework for study. These include bereavement, depression severity, and somatic factors. A brief discussion on each follows.

1.1. Bereavement

Bereavement (particularly the bereavement exclusion within DSM-IV and earlier), has been reported more frequently by females (e.g. Kersting et al., 2011; Neria et al., 2007). Not all studies are conclusive about a gender difference, however. In a large prospective study of widowhood, Sasson and Umberson (2013) found no gender differences in bereavement effects on depression symptoms in either the short or long term. Wakefield et al. (2007), in a depressed sample, did not discover sex differences between those affected due to bereavement and those affected by other losses. Furthermore, findings suggesting that widowhood has exerted a greater negative effect on men might have been due to the higher level of depression that occurred among widowers before the deaths of their wives, not after (Lee et al., 1998; Lee and DeMaris, 2007).

1.2. Depression severity

Depression severity has often been operationalized in the literature as minor vs. major depression, depending on the number of symptoms reported (e.g. Kessler et al., 1997). It is thus a gender issue given the above-noted reports of a higher symptom rate among women, controversial status notwithstanding. A number of investigators have commented on the importance of so-called "minor" or "sub-clinical" depression (Broadhead et al., 1990; Kessler et al., 1997; Lewinsohn et al., 2000). Treatment need for this symptomatically less serious form is presumably not as strong as that for the full diagnosis of major depression, but as Kessler et al. (1997) and Fergusson et al. (2005) have pointed out, it is nonetheless not to be seen as a trivial condition since it is indicative of a need for treatment and its presence offers an opportunity to prevent subsequent major depression.

1.3. Somatic Factors

Silverstein et al. (2013) have noted that the frequently reported gender differences in major depression (i.e. higher in women; Weissman and Klerman, 1977; Bland et al., 1988; Kessler et al., 1993; Robins et al., 1984; Weissman et al., 1993) become greatly reduced or disappear if somatic depression (also higher in women) is held constant. Silverstein et al. (2013) have thus hypothesized that somatic depression is a distinct disorder that has become incorrectly subsumed under the general heading of major depression. Following a similar line, Wardenaar et al. (2015) have concluded that there are two distinct forms of depression that may have different etiological mechanisms. One is characterized by somatic symptoms (the female form) and the other by mood and cognitive problems (higher in males). While several studies have found a gender difference in the prevalence of some of these symptoms, they do not all identify the same factors. For example, Khan et al. (2002) have found that gender differences in the symptoms of major depression were seen in the areas of sleep, psychomotor changes, and fatigue. Smith et al. (2008) found that women reported higher frequencies for diminished libido, excessive sleep, diurnal mood variation, and excessive self-reproach, while males showed more frequent "initial insomnia". Notably, Smith et al. (2008) found no gender differences among a number of symptoms that are very similar to those employed in recent DSM formulations to diagnose major depression (i.e. agitated activity, weight gain, poor appetite, loss of energy/tiredness, poor concentration, early wakening, suicidal ideation, anhedonia, and dysphoria).

Some investigators have pointed out that not all of the evidence supports the view that MDD comprises two or more distinct depression types, whether delineated by the somatic/psychological distinction or by gender. For example, Nazroo et al. (1997, 1998) concluded that role differences, not gender as such, accounted for most of the difference in symptom frequency, and not all depressed individuals showed the same cluster of somatic symptoms. Many studies, though, have found gender divergences in depression-like symptoms that appear during adolescence (e.g. Angold and Rutter, 1992; Cyranowski et al., 2000; McGee et al., 1992), with boys tending to move toward externalizing behaviours and girls becoming more likely to internalize. Similarly, Kouris and Garber (2014) found developmental increases in worthlessness/guilt among females during adolescence, while increases in problems with concentration and decision-making held only for males.

Superseding the findings supporting the existence of gender-based depression sub-categories is that they do not appear to show the level of independence that would justify the term "distinct" when proposing types. For example, the above-mentioned study by Wardenaar et al. (2015) examined the performance of their two-class model over a one-year period in terms of factor consistency and variability. They found that 71% of the patients showed similar somatic and mood/cognition trajectories with only 29% showing different trends (differing trends being the expectation if the two conditions were distinct). Silverstein et al. (2013) similarly made a strong case for a gender association with so-called somatic depression. Using data from two large surveys, they found a risk-ratio for female to male somatic depression to be about 2.0 when compared to their findings on "pure" depression in the National Comorbidity Survey Replication (Kessler et al., 1994) and 2.6 for cases drawn from the Zurich Cohort Study (excluding atypical depression; Angst et al., 2002). While impressive, this nonetheless means that one-third of the cases in the former and more than one-quarter of the latter do not fit the specific sub-type pattern. This may be enough to identify a trend, but it is not enough to label a trait as "male" or "female".

1.4. This study

Here, we pursued an examination of gender differences in the profile of DSM depression symptoms, particularly secondary symptoms (see Table 1). First, we conducted a comparison of the sexes on the crude prevalence of the seven secondary depression symptoms. This was followed by an analysis of the association between female and male profiles across the seven secondary depression symptoms for each of four sub-groupings of depression that were formed by combining depression severity (minor and major) and depression-related bereavement (present or absent). Third, a MANOVA was applied to the data to test the seven symptoms collectively in interaction with gender, age and bereavement. Finally, we tested a simple hypothesis regarding symptom-defined somatic depression as a potential explanation of the gender difference in depression.

2. Methods

2.1. Participants

The data for this study were drawn from an existing dataset of responses to a telephone survey of mental health and addictive behaviours in the workforce in Alberta, Canada (Thompson et al., 2011). The base survey comprised 2817 individuals aged 18 years and over who were in the workforce during the 12 months preceding data collection. The proportion of females within this original sample was 60.2%, and the age at interview ranged from 18 to 80 years (mean = 45.4 years, SD = 11.8). The sample for the present study was constituted by selecting those individuals who displayed one or both of the core symptoms for a DSM-IV lifetime diagnosis of major depressive episode (i.e. two weeks of depressed feeling and/or anhedonia, hereafter referred to as “core depression”).

2.2. The survey instrument

Questions relevant to this study were selected from the survey questionnaire used to create the above-noted dataset (Thompson et al., 2011). Depression symptoms were assessed using the Mini International Neuropsychiatric Interview (MINI Plus version 5.0.0; Sheehan et al., 1998) which is based on the nine DSM-IV symptoms. For the purposes here, the first two symptoms (i.e. two weeks of seriously depressed feeling or two weeks of loss of interest in life's activities) were considered to be indicators of core depression, with the remaining seven designated as secondary symptoms (see Table 1). In accord with the MINI interpretation of the DSM-IV diagnostic system (APA, 2000), a major depressive episode (MDE) was assigned if either of the core symptoms, plus at least three of the secondary symptoms, were present. As suggested by Kessler et al. (1997), classification of minor depression was assigned to those with less than three symptoms in the presence of either of the core symptoms. Bereavement was recorded if a core symptom occurred just after the death of someone close. The criteria for somatic depression comprised a diagnosis of MDE and the presence of all three somatic symptoms (i.e. change in appetite or weight, sleep problems, and low energy; from Silverstein et al. 2013).

2.3. Procedure

The survey questionnaire was administered via telephone by trained interviewers who were employed by a professional research firm. The survey process included the use of an automated randomized digit dialing system, with a trained interviewer becoming immediately connected when the call was answered. Administration of the survey was spread over a 13-week period. The overall response rate was 42.3% of those contacted, but it should be noted that it improved throughout the course of data collection, ranging from 28.8% and 27.0% for the first two weeks to 72.5% and 72.8% for the last two weeks. This interesting finding has been explored separately by Thompson et al. (2013) who concluded that the effective response rate can be taken to be closer to the higher end of the range, rather than the average.

2.4. Analysis

Lifetime prevalence figures were calculated, by gender, for each of the seven secondary symptoms of depression. Total symptom counts were calculated for each respondent (allowing a range of 0–7) to test for the overall gender difference. Gender profile similarity was assessed by calculating Cramer's V (e.g. Bergsma, 2013) a chi-square based measure of association across grouped symptom data which can be interpreted much like a Pearson r. A multivariate analysis of variance was used to contrast gender cross-symptom profiles and to consider the interaction of these profiles with age and bereavement. Finally, a Chi-square analysis was used to test for somatic depression by gender among those cases with core depression.

2.5. Ethics review

This study was approved by the Health Research Ethics Board of the Faculty of Medicine and Dentistry, University of Alberta.

3. Results

3.1. Core depression

As noted earlier, women outnumbered men in the original sample (60% vs. 40%; n = 2817). Those exhibiting core depression, with or without secondary symptoms, numbered 741 individuals (26.3% of all respondents) with women increasing their representation to 69% and men consequentially dropping to 31% ($X^2 = 34.11$ $p < .001$). Thus, the generally found higher rate for women in comparison to men (e.g. Weissman et al., 1977) has been replicated here for core depression (31% vs. 20%, respectively; see Table 2). Notably, the gender distribution was about the same for all three age groupings under examination, with women reporting the higher observed prevalence of core depression in each case.

Bereaved cases formed the smaller proportion for both minor and major depression (26.4% and 34.2%, respectively), with the difference between them falling short of statistical significance ($X^2 = 3.28$, $p = .07$). Women were more likely to be bereaved than men ($X^2 = 6.82$, $p < .01$) regardless of the minor/major distinction, with a gap of 9.0% for minor depression (respectively, 29.9% vs. 20.9%) and 9.7% for major depression (36.9% vs. 27.2%).

3.2. Secondary symptoms

Fig. 1 shows the male and female prevalence rates for the seven secondary depression symptoms (ordered according to decreasing frequency). This relatively modest excess of females over males was reflected in the comparison of the number of symptoms endorsed by each respondent (group means were 4.2 and 3.6 symptoms, respectively; t =

Table 2
The distribution of cases with core depression by gender across age groups.

	N	Males	Females	X^2
Total	2677[a]	20.4%	30.3%	40.96**
18 − 39 Yrs.	846	18.3%	31.4%	21.43**
40 − 50 Yrs.	908	22.1%	30.6%	10.57*
51 + Yrs.	923	20.7%	30.9%	15.20**

[a] 140 of the original 2817 respondents (5%) did not provide their age, thus the lower N value.

* $p < .01$.

** $p < .001$.

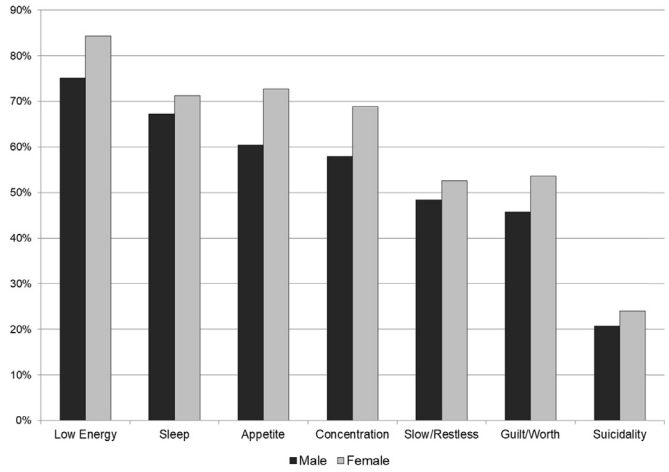

Fig. 1. Prevalence of depression symptoms by gender among those with core depression.

3.53, df = 739, p < .001).

Male-female concordance. These findings are shown in Fig. 2. As noted above, the severity by bereavement variables were used to create sub-groupings that allowed us to examine the consistency of gender associations within each of the four resultant groups. In spite of these groupings being formed on the basis of the high and low dichotomies of severity and bereavement, consistency of gender profiles proved to be the rule. That is, Cramer's V values for minor depression were .88 (p < .01) and .99 (p < .001), respectively, for bereaved and non-bereaved respondents. The comparable figures for those with major depression were .96 (p < .001) and .91 (p < .001). Looking at gender agreement overall (irrespective of severity and bereavement), the Cramer's V was nearly perfect (V = .99, p < .001). Note that the trend in Fig. 2 that appeared to show the greatest departure from the other curves was that for bereaved males who had experienced minor depression. Overall, this group had the smallest number of members. Considering missing values, the number of participants within this grouping ranged from 13 to 15, depending on the secondary symptom in question.

The associations shown in Fig. 2 reveal strong profile similarities, but they do not necessarily preclude all possible differences. Thus, in order to examine possible variations in the gender profile across the seven secondary symptoms, a MANOVA was applied to the data (the severity variable was not included since its form as a subset of the symptom variable made it inappropriate for this form of analysis). Note

Table 3
MANOVA summary table with the secondary Symptoms forming the repeated measure variable and Gender, Age and Bereavement as independent variables.

	Statistic	Value[a]	F	df	Sig
Symptoms (Ordered)	Wilks' Lambda	.534	86.89	6/597	< **.001**
Linear	ANOVA	71.24	431.45	1/602	< **.001**
Quadratic	ANOVA	5.12	34.84	1/602	< **.001**
Cubic	ANOVA	2.58	16.86	1/602	< **.001**
Sex	ANOVA	1.97	3.64	1/602	.057
Age	ANOVA	1.71	1.58	2/602	.207
Bereaved	ANOVA	2.63	4.86	1/602	< **.05**
Symptoms x Sex	Wilks' Lambda	.989	1.14	6/597	.337
Symptoms x Age	Wilks' Lambda	.986	.70	12/1194	.757
Symptoms x Bereaved	Wilks' Lambda	.984	1.63	6/597	.137
Sex x Age	ANOVA	1.52	1.40	2/602	.248
Sex x Bereaved	ANOVA	.65	1.19	1/602	.275
Age x Bereaved	ANOVA	3.67	3.39	2/602	< **.05**
Symptoms x Sex x Age	Wilks' Lambda	.974	1.34	12/1194	.190
Symptoms x Sex x Bereaved	Wilks' Lambda	.990	1.03	6/597	.406
Symptoms x Age x Bereaved	Wilks' Lambda	.981	.98	12/1194	.464
Age x Bereaved x Sex	ANOVA	1.18	1.09	2/602	.338
Symptoms x Sex x Age x Bereaved	Wilks' Lambda	.981	.98	12/1194	.470

[a] "Value" refers to variance not explained for Wilks Lambda, sum of squares for ANOVA.

that due to missing responses among the array of variables included in the MANOVA, the analysable data set was reduced to 614 individuals. The significant Wilkes Lambda in Table 3 for the Symptoms main effect reflects the Fig. 1 depiction of the relatively large variation among the secondary symptoms. An orthogonal polynomial trend analysis was selected to act as a post hoc test of the profile across symptoms, but note that the linear trend is unsurprising since we deliberately set the order of the seven components of the symptoms variable according to magnitude. The role of the polynomial analysis, then, is not to assess main effects, but rather to test for interactions between the symptoms variable and the independent variables, particularly gender. Polynomials four to six are often deemed to be difficult to interpret (e.g. Lomax and Hahs-Vaughn, 2012) and were thus not reported. In any case, the most notable impact of the composite Symptoms variable is that it did not

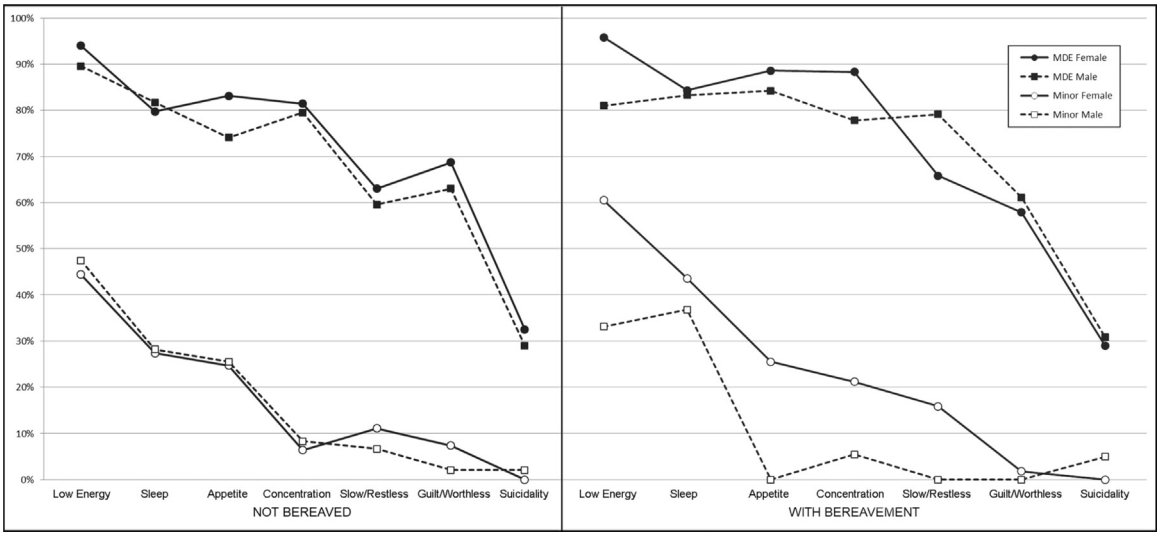

Fig. 2. Lifetime prevalence profiles of secondary depressive symptoms among those with core depression, grouped by gender, severity, and bereavement status.

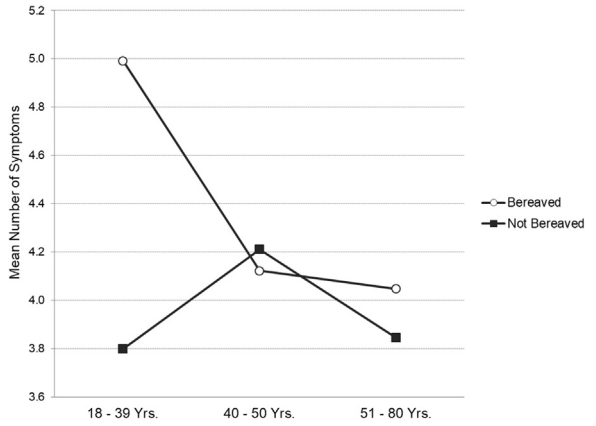

Fig. 3. Frequency of depression symptoms according to age and bereavement status among those with core depression.

interact with any other variable. In particular, the absence of a Sex by Symptoms interaction indicates that the group profiles of men and women did not differ. Thus, there proved to be no value in investigating the role of the orthogonal polynomials any more deeply here.

The relatively small difference between the proportion of males and females who displayed individual symptoms (i.e. the average of the seven secondary symptoms – rather than the profile across them) was also reinforced statistically, but its significance is technically tenuous under the MANOVA as the alpha value for the main effect for Sex dropped to $p = .057$. Furthermore, like the Symptoms factor, Sex did not interact with any other variable. Thus, the male-female symptom differences in frequency cannot, at best, be said to be large here, in spite of an earlier indication from the literature that women often show a higher prevalence of depression symptoms overall.

Bereavement, however, was significant and showed an interaction with age (see Fig. 3). Post hoc testing indicated that bereavement predominated among the youngest age group (18–39 yrs.) averaging 5 symptoms in comparison to 3.8 symptoms among those who were not bereaved ($t = 3.34$, $df = 219$, $p < .001$). The two older age groups did not show significant differences ($t = .29$ and .66, respectively). Similarly in pattern, Harkness et al. (2010) found that among a young adult age group (18–29 yrs.), women showed more than double the number of stressful life events preceding depression onset than did the males. Their two older age groupings (30–49 and 50–65 yrs.) did not show a statistically significant gender difference, nor did the youngest grouping (13–17 yrs.).

3.3. Somatic depression

Somatic depression was examined among the 368 individuals meeting the DSM-IV criteria for major depression with the bereavement exclusion. Of these, 41.7% of the males and 45.1% of the females met the criteria for somatic depression. This difference was not statistically significant ($X^2 = .35$, $p = .552$). To bring this into closer accord with the current diagnostic standard (DSM-5), the analysis was repeated without the bereavement exclusion. Again, for those meeting the criteria for MDE, the proportion of men and women with somatic depression did not differ (44.9% and 46.2%, respectively; $n = 563$, $\times^2 = .70$, $p = .791$).

4. Discussion

Foremost among our findings is that males and females showed similar profiles across secondary symptoms. When four groups were constructed from the intersecting levels of severity and bereavement, the profiles of men and women within each were again highly similar. Furthermore, there was no severity by bereavement interaction. This has implications for three issues:

4.1. Men and women: from different planets?

John Gray, in his widely read book “Men Are from Mars, Women Are from Venus”(Gray, 1992), and a number of researchers (e.g. Maltz and Borker, 1982; Michaud and Warner, 1997; Basow and Rubenfeld, 2003) have posited that men and women exhibit essentially different communication styles. So much so, that they should be regarded as members of different cultures – at least in terms of interpersonal discussions (Gray, 1992; Maltz and Borker, 1982). Clearly, our data do not support this view. Moreover, others have suggested that a gender difference such as this is unlikely. Maris et al. (2000), for example, have noted in their Comprehensive Textbook of Suicidality, “All behaviours, except perhaps those that are reproductive, are found in both males and females. Their expression, or the thresholds for eliciting them, are simply matters of ‘more’ versus ‘less’ in each gender” (p. 145). Furthermore, based on questionnaire and interview responses regarding interpersonal communication, MacGeorge et al. (2004) found that men and women showed many more similarities than differences. They concluded that the “… different cultures thesis is a myth that should be discarded”. When it comes to differences in the “amount” of several specific characteristics, Zell et al. (2015) have recently conducted a large-scale metasynthesis (a synthesis of a number of meta-analytic studies) where they found only small or very small differences between males and females on more than 85% of study attributes like risk taking, helpfulness, leadership styles, body image, intelligence, occupational stress, jealousy, morality, and others. Subsequently, Zell et al. (2016) provided data indicating that the perception that males and females are highly different is associated with both hostile and benevolent sexism. This is important as it suggests that views of gender issues are very susceptible to bias.

4.2. Somatic depression

Our findings leave little available variance for assignment to other theoretical explanations, such as the somatic depression hypothesis. This does not mean that such a theory cannot be true - it is just that any such explanation will only be able to account for a relatively small amount of the “depression variance”. Furthermore, there is certainly no justification for labelling one form as the “female disorder” and the other as the male since, at best, only a minority of each sex who are depressed could be accurately typified in this way. In any case, our constructed somatic depression variable showed no difference attributable to gender. Perhaps an important question here is whether the DSM symptoms in question (appetite or weight change, sleep problems, and low energy) serve as adequate criteria for the somatic depression construct. Arguably, they do not appear to be comprehensive, and aspects of other DSM symptoms (perhaps trouble with concentration and slowness/restlessness) could reasonably have been included.

4.3. Age and bereavement

Our findings on the proportion of women and men showing core depression (about 30% and 20%, respectively) are in line with the findings in the literature for depression generally. Our further finding of weak relationships between gender and secondary symptom differences (whether in level or profile), is suggestive of Kessler's (2000) observation that the higher prevalence of depression among women is due to the higher risk of exhibiting the disorder early on, not to other factors that occur thereafter. Furthermore, our data showing that bereavement is only associated with raised symptom frequency among young adults (18–39 years) indicates an early vulnerability to grief that is not present during middle age and beyond. Taken together, these findings point to the importance of the early onset literature which is replete with studies suggesting that depression is rooted in childhood (e.g. Anda et al.,

2002; Slavich et al., 2011; Colman et al., 2013). Many of these studies have been cross-sectional, but there is now credible evidence coming from longitudinal/prospective studies. For example, Li et al. (2015) conducted a systematic review of over 5000 citations that tested for a link between maltreatment during childhood (i.e. physical abuse, sexual abuse, and/or neglect) and adult depression. Notably, they found only eight studies that met quality and relevance criteria (including non-reliance on retrospective data), but each of these reported statistically positive associations between childhood maltreatment and subsequent depression as adults.

4.4. Limitations

First, questionnaire responses were gathered only from persons in the workforce. As a consequence, findings may not be generalizable to those who had not worked within the year preceding data collection. For example, it is plausible that those excluded because of employment issues or stay-at-home parent status might respond to depression-related questions differently. Second, even though the symptoms examined here are germane to a DSM diagnosis of major depression, there are many other such factors associated with depression that the DSM does not address. That is, there are several symptoms (rumination, avoidance, pessimism, and others) that also serve as powerful risk factors (see Dobson and Dozois, 2008). Furthermore, Fried et al. (2016) have identified 28 intertwined symptoms of depression with both DSM and non-DSM indicators being central to the depressive process, and Fried (2017) has found a low level of overlap among seven common depression scales with substantial heterogeneity across the symptoms covered (52 in all). There are many more ways to view gender issues (and there are many gender issues). Notably, several of the lines of study that were discussed above reported findings in support of the notion that the sexes are more similar than different. Perhaps this means that a new model is needed to encompass the seeming plethora of issues surrounding gender in most societies. The presumed dissimilarities thus might not involve inherent sex differences, as such, but rather may be due to inflated perceptions of gender differences (as suggested by Zell et al., 2016), influential differences in gender roles that may once have made sense due to biological restrictions such as child rearing (e.g. Nolen-Hoeksema et al., 1999), or a greater tendency to amplify depressed mood among women (Nolen-Hoeksema et al., 1999; but see Kessler, 2000, for a tempering view). Third, many of the inferences made here were drawn from correlations between groups of persons, rather than between individuals, thus placing the analyses within the realm of the “ecological fallacy” (Selvin, 1958). That is, the application of group characteristics onto individuals within that group, which can often lead to incorrect interpretations (Robinson, 1950). Nonetheless, many popular gender theories have arisen from ecological data (or no data) and are thus at risk for equal or stronger biases.

5. Conclusion

Our data showed only modest gender differences in secondary symptoms, and no evidence for a gender difference in somatic depression. These findings, coupled with the high similarity of male and female symptom profiles, suggest that the range of depressive experiences faced by each of the two sexes is very much alike, with the difference between them laying in the number affected, not in variations in kind. Finally, the data suggest that benefit could be gained from further research on bereavement vulnerability among young adults.

Author disclosure

Dr Thompson was the Principal Investigator and Dr Bland an advisor for the study that provided the sub-set of data used here. The approach to this analysis and paper preparation was developed by both investigators. Dr Thompson prepared the first draft of the paper which was reviewed and revised by Dr Bland.

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Conflict of interest

Data collection for the base study that included the questions used here was conducted under the terms of a contract between the Addiction and Mental Health section of Alberta Health Services (the sponsor) and the Institute of Health Economics, Edmonton, Canada. Supplementary analyses for this paper were supported by an unrestricted grant from Lundbeck Canada. Lundbeck Canada had no role in study design; in the collection, analysis and interpretation of data; in the writing of the report; nor in the decision to submit the paper for publication. Interviewing and data assembly were completed by a private research firm that was recruited by the Principal Investigator. There was no other potential financial conflict of interest for either of the authors of this paper, but it should be noted that a portion of Dr. Thompson's salary was paid indirectly (via the Institute of Health Economics) from the two grants noted above.

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