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Symptom Differences by Gender for Outpatient Clients as Measured by the SCL-90-R

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Abstract

It has been well accepted that women demonstrate a significantly higher prevalence for mood disorders than their male counterparts. This study included the administration of the Symptom-Checklist 90-Revised (SCL-90-R) over the course of a one-month period to a sample (n = 243) of females (66%) and males (34%) receiving treatment from an outpatient community mental health clinic. Descriptive statistics, a MANOVA, and subsequent ANOVAs revealed that women scored higher on every sub-scale of the SCL-90-R, except the psychoticism sub-scale, however, only the difference on the somatization sub-scale was statistically significant. Implications of these results for mental health providers are explored.

Symptom Differences by Gender for Outpatient Clients as Measured by the SCL-90-R

Researchers have discussed, postulated, and identified several mental health and general personality characteristic differences between the genders (Breslau & Anthony, 2007; Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006; Gentile et al., 2009; Harkness et al., 2010; O'Hare 1995; Nordentoft & Branner, 2008), with most studies indicating that females have a higher prevalence of mood disorders than men (Eaton et al., 2011). While gender differences specific to various domains have been found across several populations, there are few studies that have attempted to examine gender differences across multiple domains of psychopathology in outpatient community mental health populations. Specifically, there is limited research that has attempted to determine

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whether or not male and female outpatient clients significantly differ in regard to the presence and severity of common psychopathological symptoms and how participant cooperation in assessment may skew data and subsequent analysis.

Several studies have found that gender differences are evident across various psychopathologies and personality features. Some of these studies have demonstrated low to moderate etiological and epidemiological differences between men and women (Gentile et al., 2009; Hovanitz & Kozora, 1989; Kessler, 2003; Nordentoft & Branner, 2008). Some of these findings indicated that women are at a greater risk for developing various disorders, and for specific disorders, demonstrated significantly higher prevalence (Breslau & Anthony, 2007; Eaton et al., 2011; Olf et al., 2007). The gender differences research encompasses a variety of psychopathologies with subtleties in presentation of these disorders as well as their etiologies.

Gender differences have been researched in domains such as self-esteem (Gentile et al., 2009), posttraumatic stress disorder (PTSD; Breslau & Anthony, 2007; Olf et al., 2007), temperament (Else-Quest et al., 2006), major depressive disorder (MDD; Harkness et al., 2010; Hiott et al., 2006), co-occurring disorders (O'Hare, 1995), suicidality (Nordentoft & Branner, 2008), as well as several other characteristics. While several disorders that indicate major gender differences have been clearly identified in the research (e.g., depression; Harkness et al., 2010; Kessler, 2003), some of the disorders indicate only mild to moderate differences between genders including (a) suicidality (Harriss, Hawton, & Zahl, 2005; Hawton, 2000), (b) PTSD (Breslau & Anthony, 2007; Olf et al., 2007; Perkonig, Kessler, Storz, & Wittchen, 2000), (c) Borderline Personality Disorder (Kaehler & Freyd, 2011, Levy, 2005), and (d) co-occurring disorders (Helzer & Pryzbeck, 1988; Wilsnack & Wilsnack, 1991). While several studies related to gender differences and pathology have been useful, some findings lack practical applicability to mental health clinicians who seek methods and techniques to appropriately address cultural and pathological differences between men and women. Studies directly tied to the pathology and symptomatology differences between the genders appear to offer the most value to the practicing mental health clinician.

Suicidality and Depression

One of the more serious issues facing mental health clients and treatment professionals is suicidality. Clear gender differences have been identified in this domain and a paradox has been identified. Specifically, more men commit suicide but more women attempt suicide (Hawton, 2000). Low suicidal intent has been found to be positively correlated with a low risk of repeated suicide attempts in women, whereas a low suicidal intent for men appears to be associated with a higher risk for future suicide attempts (Harriss, Hawton, & Zahl, 2005). In a 2008 study of suicide attempters ($n = 351$), Nordentoft and Branner found that women who attempted suicide had less suicidal intention, lower self-esteem, and higher depression levels than their male counterparts. In examining more extensively the research on depression researchers have found significant differences between men and women regarding the prevalence of MDD as well as its etiology (Easton et al., 2011; Kessler, 2003).

Higher prevalence rates of MDD for women are first evident in adolescence and continue through the end of life (Kessler, 2003). In an effort to explain these gender differences related to depression, Harkness et al. (2010) examined the role of severe and stressful life events and their association with the onset of depression in both men and women. Their study indicated a significant increase in the risk of depression for women that reported a severe and stressful life event in young adulthood (18 – 29), but failed to find significance in any other age category (Harkness et al. 2010). These findings indicate that there is a critical period for women (young adulthood), during which a severe and stressful life event can increase their risk for depression, while men in the same cohort do not experience that increased risk (Harkness et al. 2010).

Posttraumatic Stress Disorder

Several studies have shown that epidemiological factors for PTSD are different for women than they are for men. After an episode of assaultive violence, women have been found to be at a greater risk to develop PTSD than men (Breslau & Anthony, 2007). Olf, Langeland, Draijer, and Gersons (2007) noted evidence that suggested several factors may contribute to women's higher risk of developing PTSD including (a) higher levels of substance abuse following trauma-related incidents; (b) age of a female when the trauma occurred; (c) violent trauma, especially of a sexual nature; (d) insufficient support systems; and (e) a pronounced perception of a loss of control. Researcher findings have indicated that men are exposed to more traumas than women, yet women have a higher risk of developing PTSD (Perkonig, Kessler, Storz, & Wittchen, 2000), therefore it is not the number of trauma exposures that explains women's higher risk for PTSD. Further, Breslau and Anthony (2007) found that women who have been exposed to an episode of assaultive violence are at greater risk to develop PTSD if they experience a non-assaultive subsequent episode, whereas this increased risk was not identified in men.

Borderline

The prevalence rate for Borderline Personality Disorder (BPD) in the outpatient population is 10%, and 75% of individuals diagnosed with BPD are female (American Psychological Association, 2000). Levy (2005) found the association between insecure attachment styles and risk of developing BPD. In a study examining the potential effects of betrayal trauma and how these effects may differ by gender, Kaehler and Freyd (2011) identified gender differences between the level of betrayal trauma and the risk of developing BPD. Their findings suggested that low, medium, and high levels of betrayal trauma were predictors of BPD in men, however, only medium and high levels of betrayal trauma predicted BPD in women (Kaehler & Freyd, 2011).

Co-occurring Disorders

On average, men are more likely to suffer from alcohol dependence and abuse as well as the corresponding symptoms (O'Hare, 1995, Wilsnack &

Wilsnack, 1991), however women who abuse alcohol are more likely to suffer from a co-morbid mental health condition (Eaton et al., 2011; Helzer & Pryzbeck, 1988). Using a sample of outpatient clients ($n = 376$), O'Hare (1995) found not only did men consume more alcohol than women, but were also more likely to have had problems related to an alcohol-related disorder within the last year, and were more likely to have received prior treatment for substance abuse. This study also found that the level of alcohol consumption, for both genders, was positively correlated with physical health problems and psychophysiological symptoms (O'Hare, 1995). The findings revealed some evidence of gender differences related to primary complaints by gender (males were more likely to complain of legal and physical health problems), but both men and women bore greater risks of pathology, including depression and anxiety, as drinking increased (O'Hare, 1995).

Other Factors

Several other factors, including internalization versus externalization (Eaton et al., 2011), self-esteem (Gentile et al., 2009), and coping styles (Hovanitz & Kozora, 1989) have been identified as relating to men and women differently. Eaton et al. (2011) found a higher prevalence of internalizing in females and a higher prevalence of externalizing in males. Further, Eaton et al. (2011) found statistically significant higher lifetime prevalence for depression, anxiety, panic, and phobia in females. Culture also plays a role in how the pathology of depression evolves differently for men and women. Hiott et al. (2006) found that within the immigrant Latino population depression level of females is heavily influenced by family-related factors, while the depression level of males is associated with their ability to earn income and maintain stable employment (Hiott et al., 2006; Magaña & Hovey, 2003).

In the current study, a sample from the outpatient mental health clients at a Mid-Atlantic community mental health clinic was assessed with the Symptom-Checklist 90-Revised (SCL-90-R). The object was to identify if there were any significant differences between the genders on any of the sub-scales of the measure. Prior research has shown that the the raw scores on the SCL-90-R for women were often higher than the men (Johnson, Ellison & Heikkinen, 1989). It was hypothesized, based on this and other prior research, that women would demonstrate a higher prevalence of symptoms consistent with depression, somatization, and anxiety (Johnson et al., 1989).

Method

Participants

The participants for this study were outpatient mental health clients being treated by a community mental health agency in the Mid-Atlantic Region of the United States. A battery of assessments, including the SCL-90-R, was administered to every client that came in for specified mental health services during the month of July, 2011, except for those clients that refused to take the battery or those who were incapable. Of the total number of admitted clients ($n = 603$) at the beginning of July, 2011, approximately half ($n = 352$) attended at least one individual or group mental health treatment session. In review of these

clients, the majority signed the informed consent and properly completed the battery ($n = 243$), however, a few clients were deemed incapable of completing the battery ($n = 12$), several clients refused ($n = 67$), and several participants' scores had to be discarded because they did not complete the assessment battery properly ($n = 30$). Of the participants who successfully completed the assessment battery, females ($n = 161$) outnumbered males ($n = 82$) by a ratio of almost two to one. Females represented a larger percentage (58%) of those who refused to take the assessment than males (42%). The average age of the participants was 42. No ethnic or cultural data was collected from the participants.

After consulting with the therapists and reviewing the charts for those who refused to participate in the study or who were not able to properly complete the assessment battery, it was determined that about 40 of the clients who refused and about 20 who failed to properly complete the assessment battery suffered from psychosis, paranoia, or personality disorders. This indicated that this segment of the outpatient mental health population was not well captured by this study and other researchers trying to measure psychometric traits in this population may experience similar problems.

The community mental health agency, from which the sample is drawn, provides services to a wide variety of clients who present with diverse pathology. Common client profiles included pathological elements such as Bipolar Disorder, Depression, Anxiety, Panic, Addiction and Schizophrenia. The agency placed an emphasis on the treatment of co-occurring mental health and substance abuse disorders, and these disorders were overrepresented in the client population. Axis IV elements that were often observed in this setting were the following: (a) low or no income, (b) no employment, (c) housing problems, (d) poor social skills, (e) legal trouble, (f) limited support from family or friends, (g) and low educational level.

Procedure

As part of a broader study, an assessment battery, including the SCL-90-R, and an informed consent were assembled. Institutional research board (IRB) approval was obtained from both Regent University and the community mental health clinic. The assessment battery was administered to those participants who were capable of taking the assessment battery and who did not refuse. The administration was typically executed prior to the clients' attendance of an individual therapy, group therapy, psychiatric, or case management appointment. The clients were not compensated in any manner for their participation in the study.

Measures

The SCL-90-R is a 90-item self-report instrument designed to assess mental health symptoms across nine sub-scales, which are generally associated with mental health pathology, and three global scales (Derogatis, 1992). The nine sub-scales of the SCL-90-R include (a) Somatization, (b) Obsessive Compulsive, (c) Interpersonal Sensitivity, (d) Depression, (e) Anxiety, (f) Hostility, (g) Phobic Anxiety, (h) Paranoid Ideation, and (i) Psychoticism (Derogatis,

1992). The three global scales are the Global Severity Index (GSI), Positive Symptom Distress Index (PSDI), and the Positive Symptom Total (PST; Derogatis, 1992). Respondents are asked to rate the severity of their symptoms on a scale of 0 to 4 (Derogatis, 1992). The instrument has been found to have high construct validity as well as high concurrent validity with similar instruments (Derogatis & Cleary, 1977).

Analysis

Multivariate analysis of variance (MANOVA) and univariate analysis of variance (ANOVA) were conducted to identify any differences between the male and female participants' scores. Box's test, Levene's test, Pillai's Trace, and effect sizes were calculated. Descriptive statistics, including means, standard deviations, and correlation matrices were calculated for the raw scores on the nine SCL-90-R sub-scales.

Results

In an effort to reveal any gender differences a MANOVA was conducted on the nine subscales of the SCL-90-R. Box's test was significant [$F(45, 92720) = 2.47, p < .001$], indicating the covariance matrices of the dependent variables were not equal across groups. In light of the significant Box's test, Pillai's Trace was selected over Wilk's Λ . Pillai's Trace indicated there was a significant difference between the genders, however, the effect size of gender was small, Pillai's Trace = .11, $F(9, 233) = 3.21, p < .001, \eta_p^2 = .11$. Subsequent to the MANOVA, univariate ANOVA's were conducted on the nine sub-scales. To correct for an elevated risk of a Type I Error, the Bonferroni method was applied and the alpha value was set to .005 (.05 divided by 9). A significant gender difference was identified for only the somatization scale, and the effect size of gender was very small, $F(1, 241) = 9.58, p < .005, \eta_p^2 = .04$. Further, the Levene's test for the somatization scale was significant, indicating that the error variance of the dependent variable was not homogeneous, $F(1, 241) = 12.52, p < .001$.

Descriptive statistics were calculated for each of the nine sub-scales and divided by gender. Women demonstrated a higher mean raw score on eight of the nine sub-scales of the SCL-90-R (Somatization, Obsessive Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation), with Psychoticism being the only sub-scale on which men scored higher.

Discussion

The findings of this study suggest that gender differences among outpatient mental health clients exist, but these differences are generally not statistically significant. These findings are not completely consistent with other much larger studies (see Eaton et al., 2011), as the results of this study indicate a higher prevalence of certain mental health symptoms in females, but not one that demonstrates a statistically significant difference as compared to male

prevalence, with the exception of the somatization sub-scale. Female outpatient clients were found to have a higher prevalence of mood disorder related symptoms than their male counterparts. Generally this difference, however, was not pronounced enough to accept the hypothesis that outpatient females would demonstrate a significantly higher prevalence for symptoms associated with depression, somatization, and anxiety. The findings on the somatization scale were significant, but the effect size of gender was small. The results for the remaining nine sub-scales of the SCL-90-R (i.e., Obsessive Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism) indicated no statistically significant differences by gender, however, the mean raw scores for females were higher than male scores on eight sub-scales, which was consistent with the findings from Johnson et al. (1989).

The progression and execution of the study revealed that research in a pure clinical outpatient environment, particularly an outpatient community mental health clinic, may present inherent challenges to researchers. Approximately 31% of the intended sample was excluded for refusal to participate (19%), inability to participate (3%), and improper completion of the SCL-90-R (9%). While it is unclear if obtaining the missing 31% of the expected participants would have altered the findings as they related to gender, it appears likely that these missing participants contributed to some level of distortion in the findings. Research on how to better capture data in the outpatient community mental health population is needed, otherwise valuable quantitative data and subsequent analyses will not be available to mental health providers.

Implications for the Treatment Community

Two distinct implications surfaced as a result of this study: (a) Female outpatients were shown to have a higher prevalence of mental health symptoms than males (although largely not a significant difference); and (b) psychopathological measurement difficulties on the outpatient population may result in the exclusion of severe cases. While many other studies have found statistically significant gender differences in regard to psychopathology and other personality characteristics (Eaton et al., 2011, Gentile et al., 2009; O'Hare, 1995), this study only found a significant difference on the somatization sub-scale of the SCL-90-R. This notwithstanding, the results of this study were consistent with other studies that indicated a slightly higher prevalence of female psychopathology. However, more research is indicated to explore the incongruence between this study's findings and those studies that found significant differences between the prevalence of male and female psychopathology. Another unexpected result of this study was the detection of higher prevalence for female mental health symptoms on a wide variety of sub-scales, some of which were not predicted in the hypothesis, including hostility and paranoid ideation.

The use of caution when designing gender-specific treatment strategies or agency policies is warranted based not only on the SCL-90-R results, but also results from the Minnesota Multiphasic Personality Inventory-2 (MMPI-2). Limited gender differences were identified by Ben-Porath and Forbey (as cited in Graham, 2006) using the MMPI-2, as they noted that the use MMPI-2 gender

or non-gender scoring would not affect interpretations of the results. Both the SCL-90-R and the MMPI-2 are highly regarded instruments, yet they have not detected the gender differences reported in many studies using other assessments. Perhaps these two instruments are not sensitive to gender differences or these differences are small. Under either scenario, this lack of certainty regarding the presence or absence of gender differences should be considered when agencies set treatment policies based on gender. Any mental health treatment, screening process, assessment procedure, or general agency policy that is dependent solely on gender may not reflect a true difference between males and females, and therefore may have limited or no utility.

Limitations

This study had a sufficient total sample size ($n = 243$) from which to draw conclusions, however, the intended sample ($n = 352$) was much larger. Given that the missing participants likely suffered from severe disorders, there is a distinct possibility that important data was not captured. Other anomalies, such as a significant Box's test for the MANOVA and a significant Levene's test for the somatization sub-scale during the ANOVA, question the validity of the results. Further, twice as many women than men participated in the study.

The measure used in this study (SCL-90-R) has limitations that could have adversely affected the data. The SCL-90-R does not contain a mechanism for detecting response distortions, which would have been helpful based on the fair number of improperly completed measures. While the SCL-90-R is a widely-used instrument for measuring dimensions of psychopathology, serious questions have been raised regarding its factor structure and validity. Numerous studies have found that many of the variables in the nine SCL-90-R sub-scales load onto the same factor, and this factor explained a large portion of the variance, making the instrument more suitable as a general measure of psychological distress and not appropriate to distinguish between specific psychopathological dimensions (Brophy, Norvel, & Kiluk, 1988; Clark & Friedman, 1983; Cyr, McKenna-Foley, & Peacock, 1985; Rauter, Leonard, & Swett, 1996; Strauman & Wetzler, 1992). The single factor loading result was found when the assessment was administered to outpatient clinic clients (Brophy, Norvel, & Kiluk, 1988, Clark & Friedman, 1983), inpatient clients (Rauter, Leonard, & Swett, 1996), and a mixed sample taken from a large medical center (Strauman & Wetzler, 1992). The findings regarding the factor structure of the SCL-90-R call into question the validity and applicability of this study's results regarding gender differences by sub-scale.

The measurement challenges for the outpatient population, including the possible underrepresentation of severe psychopathology, likely contributed to skewed data and subsequently less valid results. This assessment difficulty, which is likely shared by many outpatient mental health clinics, poses a potential challenge in the development of appropriate or effective treatment protocols for the severely mentally ill segment of the outpatient community mental health population. Most at risk for poor or no measurement were those suffering from psychosis, personality disorders, and substance abuse.

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