Poverty and Psychological Well-being in Single, Low-Income Mothers: A Meta-Analysis

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Women living in poverty face various stressors that are likely to affect their psychological well-being. The variable of being single or partnered also affects their states of psychological well-being. This meta-analysis attempts to answer the question, *Are single mothers living in poverty at higher risk for problems with psychological well-being—such as depression and anxiety—than partnered mothers living in poverty?* The meta-analysis focused on the main hypothesis that single women living at or below poverty levels were more likely to have depression or anxiety disorders than partnered women. After establishing the search criteria and collecting relevant articles, effect sizes were calculated for each study and variables were entered in SPSS 16.0 Student Edition. Descriptive and inferential statistics were calculated to examine the mean effects of depression and anxiety among studies about single and partnered women. A mean effect size of 0.36 resulted in significance levels that met the established level, so that the null hypothesis was rejected. The conclusions drawn by the study may be useful in directing further research on single and partnered women, especially in the areas of support systems, the use of mental health services, and developing efforts to help women living in poverty and facing depression.
Acknowledgements

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Introduction

Single and partnered women living at poverty both face significant challenges. In addition to being economically disadvantaged and living in households with the potential for only one provider, the women can also face high levels of stress, which can lead to anxiety, depression, and emotional or nervous conditions that can negatively affect their psychological well-being. This meta-analysis focuses on the differences in psychological health between single and partnered women living in poverty. The disadvantages of single mothering will be discussed, as will the incidence of poverty, depression and anxiety in the population. A literature review will be included, looking at articles posing similar questions or examining social theories pertinent to the hypothesis. Results from statistical analysis will be included and results and limitations of this study will be discussed. The importance of this research for social workers is highlighted, and implications for future research are shared.

Background

There is some evidence to suggest that women living in poverty are likely to experience higher levels of depression and anxiety. Financial strain and lack of support systems can increase stress and psychological distress. Compiling data on poverty and the specifics of women and psychological distress leads to the question of how women handle combinations of lower socioeconomic status, depression, and anxiety and whether social or partner support influences their situations.

The poverty threshold (i.e., yearly income) in the United States in 2007 ranged from between 16,000 to 20,000 dollars, depending on household size. The percentage of people in poverty was 12.5% (U.S. Census Bureau, 2008). Of the 37.3 million people living in poverty in the US, female-headed households accounted for 38.3% of that group (U. S. Census Bureau, 2008). These numbers lend supporting evidence to the idea of the feminization of poverty as a
social problem and to the fact that the disproportionate numbers of women with depression or anxiety are social problems.

Women are two to three times more likely to suffer depression than men, according to recent estimates (Cohen, 2008). Some biological causes of depressive symptoms have higher incidence rates among women and hormonal shifts during menstruation, pregnancy, childbirth, and postpartum periods have been associated with depression (Cohen, 2008). The DSM IV-R (2000) cites several key symptoms of major depression including depressed mood, loss of enthusiasm, changes in sleeping patterns, decreased energy, and low self-esteem. Clinical researchers have found that learned helplessness, hopelessness and irrational thoughts that women battle could lend themselves to depression and anxiety. Apprehension, uneasiness and fear about future events causes 17% of people aged 15-54 to suffer from anxiety disorders each year. Social factors in an environment are the biggest trigger for anxiety (Bufka & Barlow, 2008).

Bassuk, Mickelson, and Perloff (2002) studied the role of kin and non-kin support in the lives of women living in poverty and facing depression. A case-control design was used and 436 women—mostly heads of households—were interviewed. The interviews ranged in length from one to 10 hours and participants answered questions about socioeconomic and demographic characteristics. They completed the Center for Epidemiologic Studies Depression Scale (CES-DS) and they gave information about the support systems in their lives (Bassuk, et al., 2002). Vouchers to local stores were incentives for participation. The mean age was 27 years and the majority of respondents were single mothers from Caucasian or Puerto Rican Hispanic backgrounds. Most women had significant levels of depression and all elaborated on the support systems present in their lives, including partners, friends, professionals and relatives (Bassuk, et al., 2002).
The instrumental support and emotional support systems were analyzed and it was found that friends and professionals were most effective with social support while bringing the least conflict. Partners were more effective in providing instrumental support but brought the most conflict. The study points out that friends may be limited in the amount of support they provide due to their being in similar life situations, lacking the same means and support themselves and facing the same anxieties and stressors as the respondents (Bassuk, et al., 2002). Limitations of this study exist in the disproportionate number of Puerto Rican Hispanics interviewed and in the fact that not all interviewees had each support level in their lives.

Eshbaugh's (2006) study on the predictors of depressive symptoms among low-income women focused on teenage mothers living at poverty level. A sample of 751 teenage mothers under 20 years were studied with the sample being pulled from applicants for the Early Head Start program enrollment; they were then randomly assigned to either the program or the control group. Demographic data and depression scores on the CES-D scale were gathered. It was found that some teens had a higher risk for depression, and though the hypothesis thought that those at risk would be the younger teen mothers, it was found that age was not so much a factor as ethnicity (Eshbaugh, 2006). Those who were married (23% of the sample) showed less psychological distress symptoms, possibly due to the support of a partner. The effect ethnicity had on depression levels can likely be attributed to the cultural differences teen mothers face, with family attitudes on acceptance and cultural norms affecting the level of depression and support of a single teen mother (Eshbaugh, 2006). The limits of age on this study are somewhat overshadowed by the unique information gathered by sampling a younger population.

Job experience and change in job attitudes affects mental health differently for single and partnered women according to a study by Barnett, Marshall, and Singer (1992). A longitudinal 2 year, 3-wave study of a stratified random sample of 403 women of different races, occupations,
partnership status and parental status was done to determine the effects of job role or job quality on single and partnered women. The study was geographically limited to Massachusetts and occupationally limited to nurses and social workers (Barnett, et al., 1992). Job-role quality and psychological distress levels were measured and statistical analysis was done to track the changes over time. The study found that among single women, negative change in job-role quality raised levels of psychological distress and that among partnered women there was little effect of job-role quality change on psychological distress levels (Barnett, et al., 1992).

The hopelessness theory of depression lends to understanding the cases of women with partners having less inclination to develop depressive symptoms than single women. Gibb, Beevers, Andover, and Holleran (2006) cite the work of Abramson et al. when they define the hopelessness theory as a cognitive vulnerability stress model for understanding the development of depression. If an individual attributes negative events to consistent causes and infers negative consequences and self-characteristics always follow these causes, then they are vulnerable to developing depressive symptoms of depression in the presence of negative life events rather than when negative life events are absent (Gibb et al., 2006).

Barnett et al. reflect this hopelessness theory in their findings that women with no support face increased depression when quality goes down, because it is absolutely negative, while partnered women who have another support at home and are not faced with a wholly negative situation are less inclined to dip into depression. All the studies in this literature review have compared two similar samples with one group facing more negative consequences due to poverty. Eshbaugh’s work relates the hopelessness theory to ethnicity and cultural context of single and partnered teenage mothers. With lack of acceptance or family support, the girls become more prone to depression and anxiety. Bassuk and colleagues (2002) did not study hopelessness theory, but examined the present factors lending support to the situations of the
group rather than what one group lacks compared to the other.

The hopelessness theory fits well with the articles chosen by this meta-analysis, because of the focus on women who were facing a multitude of negative life events that leads to higher likelihood of psychological distress. Life situations alone do not determine whether a person will become depressed, but increased stress and decreased support are important risk factors. All of the studies reviewed lend support to the hypothesis that single women in poverty are more likely to suffer from psychological stressors than partnered women. Each study has unique variables that make the results more specific, such as the ethnicity factor, the levels and types of social support present in lives and the impact of job-quality on distress.

**Methods**

The purpose of this meta-analysis was to answer the question, *Are single mothers living in poverty at higher risk for problems with psychological well-being—such as depression and anxiety—than partnered mothers living in poverty?* A thorough search was conducted of the following databases: Academic Search Premier, Ebsco-Host, PsychArticles, Health Source: Consumer Edition, PubMed Central and NIH Public Access Author Manuscripts and CSA Illumina. The search was conducted using combinations of the following relevant search terms: *psychological well being, women, single women, partnered women, poverty, depression, depressive symptoms, and mental health*. The search produced secondary data in the form of published, peer-reviewed journal articles. Studies were included if written in English and published between 1994 and 2009. Studies that did not include depression or anxiety as an outcome variable and studies that did not have a comparison group were eliminated. The search did not reveal any meta-analytic studies, so deciding whether to keep or reject meta-analytic studies was not an issue.

Sixteen studies focusing on women living at poverty levels, women’s relationship status,
and levels of depression or anxiety were analyzed for this project. There were nine variables entered in the SPSS database used: sample size, single status, age, Caucasian, psychological stressor scores (including stress and anxiety levels), depression scores, a point ceiling for depression measure, adjusted depression scores, and effect size for outcome measure, whether that was depression or anxiety. A meta-analysis is used in this project because it allows the researcher to examine results of other studies, look for commonalities and gaps, and infer from effect size whether the hypothesis was accepted or not. The measure sample size was a scale-level variable measured as the number of people in each study. The single status variable was a scale-level variable and was measured as the percentage of people who were single in each study. The age variable was a scale-level variable that was measured as the average age in each study and the racial variable (also a scale-level variable) was measured as the percentage of the sample that was Caucasian.

The psychological stressor variable was measured using various depression and anxiety scales; the scales differed for many of the studies. To adjust for this difference, the scale ceiling (maximum number of points) was identified and entered as another variable. The adjusted depression score was calculated by taking the mean score and converting it to a standardized mean (out of 100 points), so that there was an equal, proportional basis available to compare a wider variety of scales on the same unit of measurement (which was scale-level). Effect sizes were calculated for each study, comparing partnered samples with single samples on the dependent measure of depression or anxiety. Effect size is a measure of the magnitude of the difference between the experimental (single) and control (partnered) groups. The formulas for converting F-ratio, mean differences, t-test, and odds ratios are shown under Figures 1-4 in the Appendix. Variables were coded and entered in SPSS 16.0. Descriptive statistics were conducted for each variable.
The main hypothesis was that single women living at or below poverty levels were more likely to have depression or anxiety disorders than partnered women. A second hypothesis was that at least half of the studies compiled in the database will show a mean effect size of at least 0.3. A meta-analysis was used to gather the information to test these hypotheses in order to compare published findings and to search for gaps and new insights from the research of others. To test significance of the analysis, the mean effect size of single status women with depression or anxiety should be at least 0.2. A second test for significance was that 50% of the studies analyzed in this project would have a mean effect size of at least 0.3, indicating problems in psychological well being.

**Results**

Descriptive statistics were calculated for each variable, while mean, standard deviation, maximum and minimum numbers for each variable can be found in Table 1. The total number of subjects represented in this meta-analysis is 12,710. Sample Sizes ranged from 11 to 4,581. The mean sample size was 746 people per study and the standard deviation was 1228.65. The percent of subjects who identified single (versus partnered) for each study was averaged, with the results ranging from 0% to 100% and produced a mean of 57.34% with a standard deviation of 30.43. Mean age was 37.1 years old, with numbers ranging from 25.14 to 55.60 and a standard deviation of 9.08. The data analyzed also included percent Caucasian, with a range of 0-85%, a mean of 48.45% and a standard deviation of 26.57. The original studies compiled in the database were measured for effect size of depression through adapting the results of F-ratios, Chi-square, t-tests, odds-ratios, and mean differences (using means and standard deviations). Mean effect size of depression and anxiety was measured and came to 0.36 with a standard deviation of 0.29. Reliability was examined and the depression measures were highly reliable in all cases with scores ranging from 0.5 to 0.9.
The hypothesis that studies supporting the fact that single women living at poverty levels were more likely to have depression or anxiety disorders than partnered women was to be accepted if the mean effect size of single women showing higher levels of depression was at least 0.2. The mean effect size of 0.36 resulted in the hypothesis being accepted. A second test to assure the effect size was significant was that 50% of the studies would have a mean depression and anxiety effect size of at least 0.3. Seven of the 16 studies had effect sizes over 0.3, providing further support for the hypothesis.

Discussion

The hypothesis was supported according to the fact that the effect sizes met the criteria assigned of having a combined mean of 0.20 and 50% being over 0.30. The hypothesis was put forward because social support is often a factor in determining risk for depression; single women- who already lack the support system inherent in a household with two adults- are more likely to face depressive and anxious symptoms. Across the 16 studies reviewed on depression and social support among women at the poverty level, the average effect of psychological distress was .36. This supports the hypothesis that women with partners tend to have lower psychological stress than those who are single.

The effect size measured of psychological distress is consistent with Chapin’s writing (2007), which found that single women with children have a disproportionately high representation among those living in poverty, due in part to policies that keep working women at a disadvantage. For these economically disadvantaged women, there are additional stressors that may cause anxiety, depression, and other emotional or nervous conditions. Single mothers might suffer more psychological distress than those who have support. All studies contributing to this meta-analysis included subjects who live at or below the poverty level. The center for American progress reports that the disproportionate number of women living in poverty is the norm for the USA. Cawthorne
(2008) says that over half of the 37 million Americans in poverty are women, with every racial and ethnic group showing a difference in the gap between men and women in poverty. Though only one quarter of the women in this disproportionate representation are single mothers, the significance for the hypothesis that this study presents between single mothers and poverty and the chances for depressive symptoms can be inferred if people consider the compounded effects of poverty and caring for dependents.

This study’s findings are similar to Amato’s study on poverty and psychological well-being, which considered the impact of poverty on psychological well-being (1992). Persons living in poverty have a poorer quality of life, which leads to other inferior circumstances, such as employment issues and job dissatisfaction, crime, illness or inadequate health care, and overall strain. Coupling the innate negative risks of living in poverty with the lack of social support inherent in a dual-income or dual-head household reinforces the theory that hardship for single mothers lacking an adequate support network would lend itself to more serious manifestations of hardship such as a lack of psychological well-being.

Samuels-Dennis (2007) reported that single mothers are two to three times more likely than the general population to have a depressive disorder. The study examined the reasons behind mothers’ disproportionate depressive prevalence and identified employment status, stressful life events and coping resources as areas having potential to determine the likelihood of depression among women. Many women who had depressive symptoms were unaware that they were suffering from a depressive disorder. The National Institute on Mental Health reported that women’s circumstances for developing depression are more varied than men (2009).

Both genetics and hormonal changes in brain chemistry at various points in life, such as during menstrual cycles, postpartum and menopause, can increase possibility for depression in women. Stress is also mentioned for its abilities to uniquely target women for depression. A
traditional role in the household for women inherently adds more stress to daily living, with more work and home responsibilities, responsibility for the care of young children and aging parents and possibly the threat of falling victim to domestic abuse affecting the wife-mother figure. Though not all women deal with each of these circumstances, their responses to these events, which is more emotional and more prolonged than men’s responses in similar situations (NIMH, 2009), causes them to have an easier trigger for becoming depressed.

The present study found that partnered women were less likely to be depressed than single women in the studies included for this meta-analysis. Single mothers may lack a social support network that is present for two-adult households. The hypothesis that single women living at poverty levels were more likely to have depression or anxiety disorders than partnered women seemed to be supported by the studies gathered for this meta-analysis. The mean difference in effect sizes when single and partnered samples were compared was .20 and 50% of the studies where the single and partnered women’s depression was directly compared showed moderate effects (greater than .30) supports the hypothesis.

**Limitations**

There were several limitations encountered as this project progressed. While searching the databases, the search term poverty was used in almost every combination. The problem that arose as the relevant studies were being compiled in SPSS that income was not measured the same way in every study and because of the different measures, the variable of income had to be omitted.

Depression scores and anxiety scores were another area of complication. Not all studies used the same instruments to measure anxiety level or depression level- anxiety was often measured alongside other social stressors. Depression was most commonly measured with the Center for Epidemiological Depression Scale, but because not all scores were measured along
the same scale, the mean of each study was adjusted proportionally in order to better show comparison. The problem of mixed methods of measurement is a common problem for meta-analytic studies. Chambers (2004) calls this the “apples and oranges” problem (p. 36).

Calculating the effect size was difficult because not all studies had anxiety and depression; some studies combined the measures while others focused on either one or the other. The mean scores for depression and anxiety were reported in a way to make both relevant, under the label of depression. For future research on the subject, it would be easier to analyze data if depression scores were calculated using the same scale. To be able to assign mean incomes to the study would better enable analytical statistics.

There limitations found specifically when dealing with meta-analysis methods. One is the problem of publication bias. Often studies that do not have significant relationships are not published which creates the so-called “file drawer problem” (Chambers, 2004; Torgerson, 2006). There is also the problem of differing levels of study quality. Studies that are more rigorous are given no more weight than studies with weak methods or analytic strategies. The final problem is using results from the same study in meta-analysis, which can lead to oversampling (Chambers, 2004).

**Conclusions**

The overall conclusions that can be drawn from this study are that single women living in poverty face serious obstacles in life, which lead to their increased risk for depression and anxiety disorders, decreasing their quality of life and psychological well being in general. This meta-analysis resulted in proving a hypothesis that single women are more inclined to face psychological distress than partnered women, especially those at poverty level. These findings can potentially be used to improve interventions with single and partnered women, through better understanding the systems they are part of, as well as potentially being used to develop programs
which focus on women in these particular circumstances, trying to build a support system before
depression and anxiety become bigger problems in their lives. This project has highlighted the
importance of social support when dealing with stress, the fact that depression and anxiety are
triggered not only by chemistry but by life situations, the differences women living in poverty
face depending on their partnered status, and the need for attention to building social support
systems for single women and the difficulties that can be found in trying to assess studies using
different measures when completing a meta-analysis.
References


*Mulia, N., Schmidt, L., Bond, J., Jacobs, L., & Korcha, R. (2008). Stress, social support and
problem drinking among women in poverty. *Addiction, 103*(8), 1283-1293. doi:
10.1111/j.1360-0443.2008.02234.x


Table 1: Descriptive Statistics for Key Variables

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Figure 1: Formula for Conversion of F-ratio to Effect Size $r$

$$ES = \sqrt{\frac{F(n_1 + n_2)}{n_1 n_2}}$$

Figure 2: Formula for Conversion of Mean Difference to Effect Size $r$

$$r = \sqrt{\frac{d^2}{d^2 + \frac{1}{pq}}} \quad p = \frac{n_e}{n_e + n_c} \quad \text{and} \quad q = 1 - p$$

Where

$$1 + \frac{ad}{bc}$$

Figure 3: Formula for Conversion of t-test to Effect Size $r$

$$ES = t \sqrt{\frac{n_1 + n_2}{n_1 n_2}}$$

Figure 4: Formula for Conversion of Odds-ratio to Effect Size $r$

$$r_{\cos-\pi} = \cos \left( \frac{180^\circ}{1 + \sqrt{\frac{ad}{bc}}} \right)$$

where odds ratio is $= \frac{ad}{bc}$.