Parenting and Depression among Homeless Women: Understanding the Mediating Role of Quality of Life

by

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Ethics Statement

The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

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Abstract

Homeless mothers represent an extremely vulnerable population. Research consistently revealed that they experience poor quality of life (QoL) and increased depression. Evidence also indicated that increased QoL is associated with improvements in depression. Whether the effect of parenting status on depression is mediated by QoL is unclear. This study, therefore, examined how parenting status affects depression among homeless women, through subjective quality of life (SQoL).

This secondary analysis drew from the 325 chronically homeless women who completed the At Home/Chez Soi Study baseline questionnaire. Associations were examined using bivariate analyses and mediation analyses were performed using bootstrapped regression models. SQoL explained the association between parenting and depression; leisure accounted for the largest proportion (27%) of the variance on depression. The findings highlighted the importance of providing supports to homeless mothers, so as to improve their SQoL and depression. Specifically, findings suggested that leisure could partially improve depression among homeless mothers.

Keywords: Homeless mothers; mental health; depression; mediation analysis; subjective quality of life; leisure activities

I dedicate this thesis to my grandmother.
Our time together was brief,
but her love and contributions to my life
will stay forever.

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I could not have achieved this alone. There exists a support network made up of special people who have encouraged me to embark on and finish this journey.

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My family has been truly supportive. I thank my parents for their patience and support in all my life choices. I thank my brother for his silent but strong support. I also thank my sister for her unending support and for giving me a plaque that reads “If you can dream it, YOU CAN DO IT. ~ Walt Disney”. Those words provided inspirations especially during trying times.

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List of Acronyms

AHS	At Home Study
AOD	Alcohol or Other Drug dependency
aOR	Adjusted Odds Ratio
B	Unstandardized regression coefficient
CI	Confidence Interval
LLCI	Lower Level of Confidence Interval
M.I.N.I.	Mini International Neuropsychiatric Interview 6.0
MDD	Major Depressive Disorder
OLS	Ordinary Least Squares
P_M	Proportion mediated
QoL	Quality of Life
QoLI-20	20-item Quality of Life Interview
SD	Standard Deviation
SPSS	Statistical Package for the Social Sciences
SQoL	Subjective Quality of Life
ULCI	Upper Level of Confidence Interval
US	United States

Glossary

Major depressive disorder (MDD)	Requires two or more major depressive episodes. Diagnostic criteria include: Depressed mood and/or loss of interest or pleasure in life activities for at least 2 weeks and at least five of the following symptoms that cause clinically significant impairment in social, work, or other important areas of functioning almost every day 1. Depressed mood most of the day 2. Diminished interest or pleasure in all or most activities 3. Significant unintentional weight loss or gain 4. Insomnia or sleeping too much 5. Agitation or psychomotor retardation noticed by others 6. Fatigue or loss of energy 7. Feelings of worthlessness or excessive guilt 8. Diminished ability to think or concentrate, or indecisiveness 9. Recurrent thoughts of death (American Psychiatric Association [APA], 2000, p. 356)
Subjective Quality of Life (SQoL)	How well human needs are met or the extent to which individuals or groups perceive satisfaction or dissatisfaction in various life domains (Costanza et al., 2008)

Chapter 1.

Introduction

Homelessness is a social problem that has historically been associated with single male adults living on “skid rows” or those suffering from severe and chronic mental illness. As “skid rows” declined in the 1970s, the failed policy in deinstitutionalization of psychiatric hospitals saw a growth in homelessness among formerly institutionalized patients with severe and chronic mental illnesses (Sealy & Whitehead, 2004). In the United States (US), deinstitutionalization was followed by economic crises in the 1980s and again in 2008, which led to reductions in social services, high unemployment rates, unaffordable housing market (Grant, Gracy, Goldsmith, Shapiro, & Redlener, 2013; Masten, 2012; Oberg, 2011), and a surge in family homelessness that continues to this day (Hughes, 2016).

Similarly, in Canada, family homelessness increases as the neoliberal policy on public housing and social services no longer considered affordable housing for all individuals an obligation (Hulchanski, 2009). Major cutbacks in social services such as rental subsidy began in 1980s and spending on social housing construction terminated in 1996 (Hulchanski, 2009). Moreover, income inequality increased and the cost of housing became unaffordable especially for families headed by a single mother earning minimum wage (Grant et al., 2013). Instead of reducing structural and social constraints, neoliberal ideology promotes self-reliance and blames poverty and homelessness on the individuals (Hulchanski, 2009). All-in all, the shift in government priorities in the recent decades has resulted in growing rates of family homelessness (Hulchanski, 2009).

Homeless families, especially those living in major US cities, currently account for approximately 40% of the total homeless population (Henry, Cortes, & Morris, 2013; National Alliance to End Homelessness [NAEH], 2015; Henry, Shivji, de Sousa, & Cohen,

2015). Compared to single homeless adults, homeless families, typically consisting of one parent with two dependent children, take up three times the number of total beds in shelters and have much longer shelter stays (Segaert, 2012). With limited structural level resources and increasing family homelessness, strategies are required that will reduce family homelessness and improve the well-being of such families' individual members. Effective allocation of resources will require an understanding of the complexities and unique circumstances of family homelessness.

1.1. Pathway to Homelessness

Factors contributing to family homelessness can be categorized into structural and individual factors. Structural factors include chronic poverty, shortage of affordable housing, economic restructuring, and diminishing government financial assistance and social services (Biel at al., 2014). Individual factors include domestic violence (Tischler, Redemeyer, & Vostanis, 2007; Burczycka & Cotter, 2011), relationship breakdown (Tischler et al., 2007), mental illness, post discharge from facilities such as prisons, hospitals and mental health institutions (Sev'er, 2002; Tutty, Ogden, Giurgiu, & Weaver-Dunlop, 2014), parental alcohol or drug dependency, parental mental illness, and an intergenerational history of homelessness and foster care placement (Biel et al., 2014).

Homelessness tends to proceed cyclically and has intergenerational consequences (Tischler et al., 2007). The cycle of homelessness is linked with poverty, mental illness, substance abuse, and foster care. It often begins with family homelessness, in which the family is headed by a single mother who struggles to maintain her family's structure while battling personal mental health and substance abuse issues (Zlotnick, Tam, & Robertson, 2004).

The adverse effects of homelessness are especially challenging for children. Homeless children face interrupted education and developmental issues such as emotional and behavioural problems (Paquette & Bassuk, 2009). Physical and mental health issues are also more prevalent among homeless children compared to housed-but-poor children (Grant et al., 2013). For example, homeless children are more likely to experience malnutrition and less likely to receive preventative health care such as up-to-

date immunization and intervention program for those with mental health issues (Grant et al., 2013).

Furthermore, the risk of involuntary placement of homeless children into the foster care system is high (Park, Metraux, Brodbar, & Culhane, 2004). Children in foster care, in turn, are at high risk of repeated homelessness (Bassuk, Mickelson, & Perloff, 2001; Biel et al., 2014). In fact, 20% of youth who age out of the foster care system become homeless within one year (Kushel, Yen, Gee, & Courtney, 2007) and many homeless families are led by young mothers who have recently emerged from the foster care system (Biel et al., 2014).

Homeless women who had been foster children are more likely to suffer from mood disorder, substance dependency, and victimization related to childhood abuse and domestic violence (Viner & Taylor, 2005). Domestic violence is the most frequently reported reason for family homelessness with approximately 32% of homeless women citing this as the primary reason for their homelessness (Gardiner & Cairns, 2002). With inadequate affordable housing and an overburdened social assistance system, after a short shelter stay, one-half of the women who fled from abusive relationships are forced to return to their abusive partners (Sev'er, 2002; Tutty et al., 2014), while others rapidly enter another abusive relationship (Duff, Deering, Gibson, Tyndall, & Shannon, 2011; Loates & Walsh, 2010).

Mental health problems in mothers and their children are inter-related (Holleman, Bray, Davis, & Holleman, 2004), and high rates of parenting difficulties and mental health needs among homeless parents and children have been observed (Tischler, Karim, Rustall, Gregory, & Vostanis, 2004). A trend is observed in which inadequate structural level supports contribute to individual level factors, which then leads to homelessness among poor mothers. As a result, family homelessness continues to be problematic and remains one of the fastest-growing homeless subpopulations in North America (Banyard, 1995; Meadows-Oliver, 2003).

1.2. Homeless Families: What Do They Look Like?

Homeless families typically consist of a single mother with two or more young children (Henry et al., 2013; Bassuk, DeCandia, Beach, & Berman, 2014). Homeless mothers are often younger in age than homeless women with no children (Montgomery, Brown, & Forchuk, 2011). They have limited education and income (Raikes & Thompson, 2005; Henry et al., 2013; Bassuk et al., 2014), lack life skills and related problem solving abilities (Raikes & Thompson, 2005), and are isolated from their social networks (Choi & Snyder, 1999; Raikes & Thompson, 2005; Whitzman, 2006). These individual and family characteristics suggest that mothers living in poverty have limited support and resources which may have contributed to their high risk for homelessness (Montgomery et al. 2011; Park et al., 2004).

1.2.1. How Did They Get There?

Family homelessness is "hidden" compared to the visible "rough sleepers". Mothers often avoid shelters due to concerns with safety, stigma, and disruptions to their own and their children's daily routine (Whitzman, 2006). Before resorting to the shelter system, mothers utilize their social support system and "couch surf" (Choi & Snyder, 1999; Whitzman, 2006). Couch surfing, although perceived by the women to be safer than shelter living, is not without complications. Common concerns include a lack of belongingness, potential involvement in unhealthy social relationships, and increased exposure to harm such as drugs, alcohol and sexual assaults (Whitzman, 2006). Furthermore, mothers often couch surf in overcrowded and poorly maintained housing (Whitzman, 2006). Couch surfing is, therefore, temporary and often preceded by shelter living.

1.2.2. The Experience of Homelessness

While in shelters, mothers become vulnerable to "fishbowl" effects that occur when they parent under strict supervision in highly visible and stressful environments, (Friedman, 2000). Homeless mothers are judged by society based on their deviation from ideal mothers. That is, they are perceived as "bad mothers" because they may not be

able to protect their children from harms such as exposures to abuse, drugs, and other adverse aspects of homelessness. Without sufficient resources, they are forced to balance basic physiological needs with fulfilling their children's needs (Robson, 2005).

Homeless mothers' parenting is often criticized by the very professionals who are tasked to assist them. In situations where mothers are reprimanded in front of their children by shelter staff, the mothers often experience diminishing parental authority and loss of respect from their children (Meadows-Oliver, 2002). Loss of self-esteem also happens and that may erode their capacity to provide protection and support to their children. Their response to their children's needs, as a result, is reduced (Raikes & Thompson, 2005).

The neoliberal ideology promotes self-reliance and independence where homeless mothers are expected to look after their own children. Deviance is handled through formal systems of social control such as child welfare services. Therefore, mother-child separation is often feared. Zlotnick (2009) and Montgomery et al. (2011) found that approximately 80% of single homeless women are mothers of dependent children who mostly live in foster care. Once removed and placed into foster care, homeless children are no longer eligible for services funded for homeless children. Thus, mothers risk losing benefits such as social services and housing available to families only (Zlotnick, Robertson, & Lahiff, 1999). Mothers with dependent children are typically rehoused after staying an average of 50 days in a shelter (Segaert, 2012), while single homeless women experience longer homelessness duration with a median length of 194 days (Caton et al., 2005). Therefore, women who have lost custody of their children are more likely to be chronically homeless (Segaert, 2012).

In summary, besides stressors related to housing instability and fears of child separation, homeless mothers also experience the compounded stress of prioritizing their children's safety and fending off criticisms while living at shelters (Meadows-Oliver, 2003), When public ideals, such as what constitutes a perfect mother, result in increased scrutiny from health care professionals and shelter staff, homeless mothers' quality of life is affected. To avoid punishments, the homeless mothers have to minimize deviance and internalize the stress, which further tax their coping abilities. It is, therefore, not surprising that homeless mothers experience disproportionately high rates of mental illness

(Zabkiewicz, Patterson, & Wright, 2014; Karim, Tischler, Gregory, & Vostanis, 2006; Page & Nooe, 2002).

1.2.3. Mental Health and Quality of Life of Homeless Mothers

Mood disorders, particularly major depression, are the most common mental health problem reported among homeless mothers (Montgomery et al., 2011). The lifetime prevalence of depression among homeless mothers is between 45 and 85% (Bassuk et al., 1996; Bassuk, Buckner, Perloff, & Bassuk, 1998; Weinreb, Buckner, Williams, & Nicholson, 2006), which is substantially higher than 40 to 60% for low-income mothers, 25% for low-income women with no children, and 12% to 25% in the general female population (Knitzer, Theberge, & Johnson, 2008; Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012).

Depression among homeless mothers is exacerbated by the challenging circumstances within the shelter system and the struggles to maintain family structure (Barrow & Laborde, 2008; Meadows-Oliver, 2002). Depression, combined with negative shelter circumstances and loss of autonomy, may also decrease QoL by increasing dissatisfaction in many facets of life.

Research findings on women living in poverty have revealed that homeless women experience poorer QoL compared to the general population (Hubley, Russell, Palepu, & Hwang, 2012). Among homeless women, those with dependent children reported the lowest QoL regarding several aspects of their lives, including overall QoL, finances and leisure activities, as compared to single homeless women (Montgomery et al., 2011). Moreover, poor QoL has been associated with mental illness. Sullivan, Burnam, Koegel, and Hollenberg (2000) reported that homeless individuals with mental illness have even poorer quality of life compared to those without mental illness.

In summary, while the research literature has revealed associations between parenting, mental health, and QoL among homeless women, the mechanisms involved in the relationship between parenting and depression is less clear. Specifically, no study has examined whether homeless mothers' high rates of depression are mediated by their SQoL. Further research on how parenting affects depression among homeless women

may contribute to our understanding of the challenges and circumstances homeless families face. An examination of specific life domains may shed light on which aspects of the homeless experience are important in improving the mental health of homeless mothers.

1.3. Research Objective

This study built upon prior research by Zabkiewicz, Patterson, and Wright (2014) who found that homeless mothers who had been homeless for over two years experienced significantly higher depression rates compared to homeless women without dependent children (Zabkiewicz et al., 2014). Whether parenting status affects depression among chronically homeless women, through an examination of the mediating role of QoL, was assessed in the present study. More specifically, this study assessed whether total SQoL, as well as specific SQoL subdomains including family, social relations, finances, safety, leisure activities, and living situation account for the relationship between parenting and depression among homeless women who have been homeless for over two years. Figure 1-1 is a causal diagram illustrating the relationships assessed.

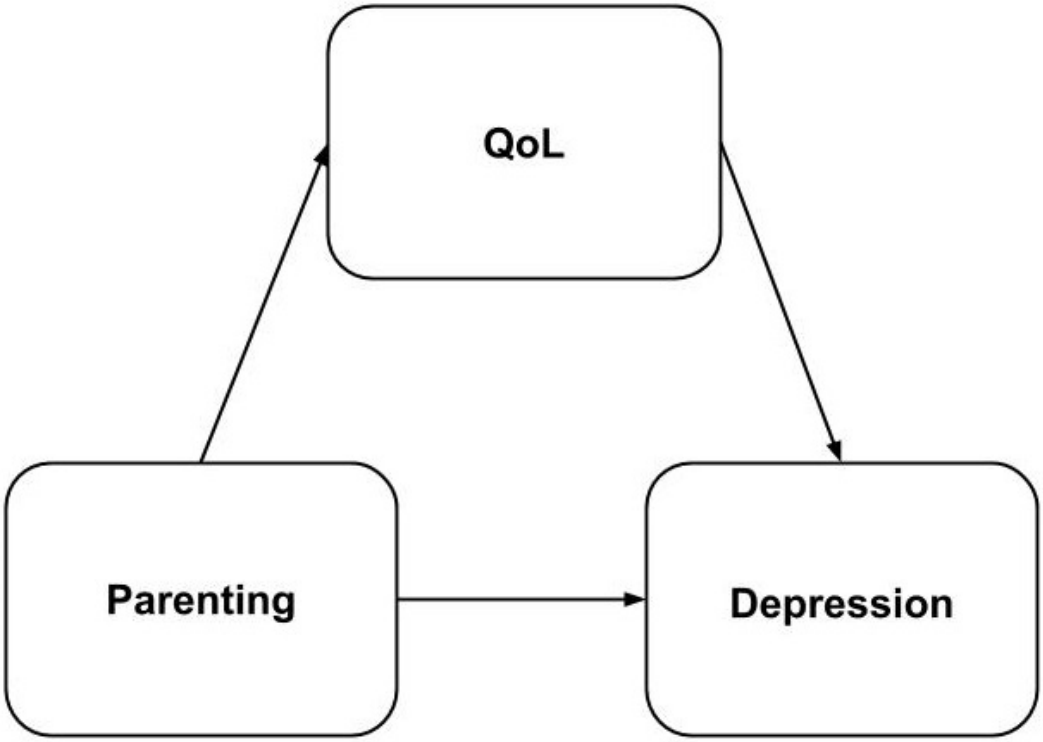

Figure 1-1. Directed Acyclic Graph for the Relationship between Parenting Status, Depression and QoL

Chapter 2. Methods

2.1. Sample

This analysis drew from a subsample of women (n = 325) who participated in the national At Home/Chez Soi Study (AHS) and experienced long term homelessness of duration greater than two years. The AHS is a national demonstration project funded by the Mental Health Commission of Canada (MHCC) that was conducted in five sites across Canada: Vancouver, British Columbia; Winnipeg, Manitoba; Toronto, Ontario; Montreal, Quebec; and Moncton, New Brunswick. The 4-year randomized controlled trial that emerged from this project, conducted between 2009 and 2013, was based on a Housing First model and designed to provide evidence on services and system interventions for improving housing stability, health status, and well-being for the target population of homeless adults living with mental illness (Goering et al., 2011).

Approximately 2,500 study participants were recruited through referrals from a wide variety of agencies in the community including housing, mental health and criminal justice programs. Participants were randomized to either treatment as usual (TAU; no housing or support through the study) or to housing and support interventions based on level of needs. Eligibility criteria included (1) legal adult status (18 years or older in all cities except in Vancouver, British Columbia where the age of majority is 19 years); (2) experiencing a mental illness; and (3) lacking a regular, fixed shelter or primary single-room residence in a rooming house or hotel/motel.

The AHS was a longitudinal study that followed participants for two years after enrollment. The present study, however, focused on the data collected through baseline questionnaire. The baseline questionnaire queried a broad range of domains, including housing, health status, community integration, recovery, vocational attainment, quality of life, health and social services, and criminal justice system involvement. Relevant to this study were questionnaire data on socio-demographic characteristics (Module A Demographics, Services and Housing History), symptoms of mental illness (Module B Diagnosis - M.I.N.I), and subjective quality of life (Module F Disease-specific QoL – QoLI-20).

Data were collected by trained interviewers using computer-assisted interviewing method. All participants provided written informed consent and were paid cash honoraria of between $20 and $30 upon completion of baseline interview (Goering et al., 2014). In addition, the AHS has been registered with the International Standard Randomised Control Trial Number Register (ISRCTN42520374), and has been approved by the Research Ethics Boards at all ten participating institutions including Simon Fraser University. Details on the full study design, questionnaire measures, and methods have been published elsewhere (Goering et al., 2011). The present study has been approved by the Office of Research Ethics at Simon Fraser University (2015s0045).

2.2. Variables and Measures

The following variables and measures were used to assess the relationship between parenting status and depression among homeless women and the mediating role of subjective quality of life (SQoL).

2.2.1. Exposure Variable

Parenting Status. Parenting status was measured as part of the Demographics, Services and Housing History questionnaire module. The operational definition of parent was a positive response to the question, "How many children do you have under the age of 18 (19BC)?". A dichotomous variable was created based on participant responses where responses of 0 children were recoded as '0' and responses greater than 0 were recoded as '1'.

2.2.2. Outcome Variable

Depression Status. Major depression was measured at baseline using the Mini International Neuropsychiatric Interview 6.0 (M.I.N.I. 6.0) for DSM-IV psychiatric disorders (APA, 2000). The M.I.N.I. is a structured diagnostic interview for major Axis I psychiatric disorders and it has been validated against both the Structured Clinical Interview for DSM diagnoses (SCID-P) and Composite International Diagnostic Interview for ICD-10 (CIDI) where a good level of concordance ($k > 0.73$) and a high level of reliability ($k > 0.87$) have

been found (Sheehan et al., 1998). For the purposes of this analysis, major depression was measured as a dichotomous variable with '1' indicating participants diagnosed with major depression and '0' indicating participants without major depression.

2.2.3. Mediator Variable

Subjective Quality of Life. SQoL is a quantitative variable measured using the self-reported 20-item Quality of Life Interview (QoLI-20). This continuous measure allows for the assessment of both overall QoL as well as specific subdomains. Specific subdomains include family, finances, leisure activities, living situation, safety, social relations, and a global item measuring overall satisfaction with life (Uttaro & Lehman, 1999). Each subdomain was measured by a specific number of subscale items and participants were asked to rate each item on a scale of 1 to 7 where 1 represented "terrible" and 7 represented "delighted". Scores for each subdomain item were summed for QoL subdomain analysis. The range of scores for each subdomain includes finances which ranges from 2 to 14; family and safety which range from 4 to 28; leisure activities which ranges from 5 to 35; living situation and global life satisfaction which range from 1 to 7; and social relations which ranges from 3 to 21. In addition, scores from all subdomains were combined to reflect a total QoLI-20 score which ranges from 20 to 140. Given this coding scheme, lower QoLI-20 score indicates a poor SQoL while a higher score indicates a better SQoL. QoLI-20 has been validated and found to have high internal consistency ($\alpha = 0.90$) and reliability ($r = 0.90$) (Uttaro & Lehman, 1999; Lehman, 1996; Lancon et al., 2000).

2.2.4. Socio-demographic Characteristics and Potential Confounders

In order to control for factors that might explain any relationships between parenting status, QoL and depression, socio-demographic characteristics and potential confounders identified in prior research were accounted for.

Socio-demographic Characteristics. In this study, relevant socio-demographic characteristics included age, marital status, education, race and social

support. Age, calculated in years from date of birth, was categorized into three groups – under 25, between 25 and 45, and over 45 (Zabkiewicz et al., 2014). Under 25 served as the reference group. Marital status was categorized into single or never married; married or partnered; and separated, widowed or divorced. Single or never married served as the reference group. Education was coded into '1' and '0' to indicate whether the participants had completed their high school education. Race was coded into 'white' and 'minority'. White Canadians and Europeans were classed as 'white,' and women of colour (including "Aboriginal", "Asians", "Blacks", "Latin Americans", "Indian-Caribbean", "Middle Eastern" and "mixed backgrounds") were classed as 'minority.' 'White' served as the reference group. Social support was coded as '1' for participants with a close confidante, and '0' for those who reported having no one to share sensitive personal information with.

Given the strong association between mental health and substance use among individuals living in poverty (Montgomery et al., 2011; Welch-Lazoritz, Whitbeck & Armenta, 2015), this analysis also accounted for alcohol and substance dependence. Alcohol and substance dependence measures were drawn from the M.I.N.I.. Alcohol or other drug (AOD) dependency was coded as '1' to indicate any alcohol or substance dependence diagnosis, and '0' for the absence of both alcohol and substance dependence.

2.2.5. Statistical Analysis

This study begins with a bivariate descriptive analysis examining the sociodemographic and QoL characteristics of the sample by parenting and depression status. Here, Pearson's chi-square tests or student's independent t-tests were utilized to assess any statistically significant associations in the variables of interest. The analysis proceeded with an assessment of the mediating role of QoL.

2.2.6. Mediation Analysis

Mediation analyses followed Hayes approach (2013) which draws on bootstrapping procedures with replacement where a replication of 5,000 was performed. Analyses were conducted using PROCESS version 2.15, an add-on for SPSS that uses a

bias-corrected bootstrapping approach. PROCESS uses an ordinary least squares (OLS) and logistic regression-based path analysis for estimating direct and indirect effects in mediation models (Hayes, 2013). The indirect effects were assessed at the .05 level.

The presence of mediation is indicated when a reduction in total effect is observed after controlling for the proposed mediator. The significance of the indirect effects were tested using bias-corrected bootstrap 95% confidence intervals (CIs). If the upper and lower bounds of the bias-corrected CIs did not contain zero, there was no statistically significant mediation.

All mediation analyses were replicated using Baron and Kenny's causal steps approach (1986) to assess robustness of findings and interaction effects were assessed prior to the mediation analysis to rule out the possibility of differential effects (VanderWeele & Vansteelandt, 2010). These supplemental analyses are offered in Appendices A and B.

2.3. Missing Data and Statistical Package

Missing values were deleted from the analyses through the use of the SPSS default command "listwise deletion".

All statistical analyses were executed using Statistical Package for the Social Sciences (SPSS) Version 20.0. The level of statistical significance was set at .05 and tests were bidirectional.

Chapter 3. Results

3.1. Socio-demographic Characteristics

The socio-demographic characteristics of the women appear in Table 3-1. A total of 325 participants met the eligibility criteria. Participants ranged in age from 19 to 74, with a mean age of approximately 39 years (*SD* = 10.5). Participants were, predominantly, 25 years old or older; 55% were between 25 and 45 years, and 37% were over 45 years old. Most had a minority background (58%), never completed high school (58%), and were either single or had never been married (67%). Furthermore, 48% had young dependent children, and 46% lacked social support. The majority of participants experienced mental health issues: 62% of the participants had been diagnosed with current major depression, while 66% had current alcohol or another drug (AOD) dependency. Furthermore, women with minority background were more likely to have dependent children (56%, $p < .01$), and have a diagnosis of current major depression (67%; $p < .05$) compared to white women.

Women with children were significantly younger than women with no children. The average age of women with children was 36 (*SD* = 8.7), compared to 43 for women with no children (*SD* = 10.8, $p < .01$). Forty-eight percent of women under 25 reported having dependent children; 64% of women between the ages of 25 and 45 reported having dependent children; 24% of women over 45 reported having dependent children. A large proportion of women with dependent children had mental health diagnoses. Among women diagnosed with current major depression, 56% ($p < .01$) were women with dependent children; among women diagnosed with AOD, 58% ($p < .01$) were women with dependent children.

When compared to parenting or depression status, many socio-demographic variables were not statistically significant at the .05 level. However, a trend in proportion differences was found in which women with children were more likely to have minority backgrounds, be between the ages of 25 and 45, be less educated, be single or never married, experienced current major depression, and have current AOD. Similarly, women who have depression were more likely to have minority backgrounds, be between the ages

of 25 and 45, have less education, be single or never married, and have current AOD. Women with depression were also more likely to have dependent children.

Table 3-1. Socio-demographic Characteristics by Parenting and Depression Status

Demographic characteristics	Overall		Parenting status				P-value	Depression status				P-value
			Yes		No			Yes		No		
	N	%	N†	%	N†	%		N†	%	N†	%	
Race	325						.000					.031
White	138	42.5	50	36.2	88	63.8		76	55.1	62	44.9	
Minority	187	57.5	104	56.2	81	43.8		125	66.8	62	33.2	
Age (years)	325						.000					.181
<25	29	8.9	14	48.3	15	51.7		18	62.2	11	37.9	
25-45	177	54.5	111	63.4	64	36.6		117	66.1	60	33.9	
≥45	119	36.6	29	24.4	90	75.6		66	55.5	53	44.5	
Mean (SD)	39.49(10.47)		35.62(8.65)		43.05(10.80)		.000	38.66(10.20)		40.85(10.81)		.067
High school education	323						.057					.096
Yes	135	41.8	55	41.4	78	58.6		76	56.3	59	43.7	
No	188	57.8	98	52.1	90	47.9		123	65.4	65	34.6	
Social support	322						.769					.833
Yes	173	53.7	82	48.0	89	52.0		106	61.3	67	38.7	
No	149	46.3	69	46.3	80	53.7		93	62.4	56	37.6	
Marital status	323						.369					.067
Single/never married	216	66.9	103	48.2	111	51.9		125	57.9	91	42.1	
Married/partnered	25	7.7	15	60.0	10	40.0		17	68.0	8	32.0	
Separated/widowed/divorced	82	25.4	36	43.9	46	56.1		59	72.0	23	28.0	
Major depressive disorder (MDD)	325						.000					-
Yes	201	61.8	113	56.2	88	43.8		-	-	-	-	-
No	124	38.2	41	33.6	81	66.4		-	-	-	-	-

Parenting status	323						-					.000
Yes	154	47.7	-	-	-	-		113	73.4	41	26.6	
No	169	52.3	-	-	-	-		88	52.1	81	47.9	
Current alcohol or other drug dependency (AOD)	325						.000					.000
Yes	214	65.8	124	58.2	89	41.8		156	72.9	58	27.1	
No	111	34.2	30	27.3	80	72.7		45	40.5	66	59.5	
Total	325	100.0	154	47.7	169	52.3		201	61.8	124	38.2	

† Numbers may not sum to total as a result of missing data

3.2. Subjective Quality of Life Characteristics

As shown in Table 3-2, overall, participants reported low SQoL score. The total SQoL mean score was located around the midpoint of the QoLI-20 rating scales, while subdomain mean scores were below midpoints, except for leisure activities and safety, which were slightly above midpoint. The low ranges were in contrast to scores of general population which were scored much higher at 75% of the maximum values (Cummins 1995; Huxley & Evans, 2002).

When stratified by parenting status, the mean scores for participants with children decreased and the mean scores for participants with no children increased compared to overall sample mean scores. Although participants with children scored consistently lower SQoL than those with no children, only leisure activities and social relations differed significantly ($p < .05$) by parenting status.

Analysis of SQoL by depression status found significantly lower scores ($p < .01$) in total and all SQoL subdomains for participants diagnosed with depression compared to those without depression. Scores for all subdomains were scored higher than overall sample by participants with no depression, and lower by participants with depression. Notably, SQoL scores are the lowest for participants with depression, followed by participants with children, then without children. Participants with no depression scored the highest. All scores, regardless of parenting or depression status, were low compared to the general population (Cummins, 1995; Huxley & Evans, 2002).

Table 3-2. SQoL Characteristics by Parenting and Depression Status

SQoL domains	Range	Overall		Parenting status				P-value	Depression status				P-value
				Yes		No			Yes		No		
		N	Mean(SD)	N†	Mean(SD)	N†	Mean(SD)		N†	Mean(SD)	N†	Mean(SD)	
Total SQoL	20-140	285	69.41(21.77)	134	67.31(22.14)	149	71.36(21.07)	.116	179	64.02(19.90)	106	78.51(21.86)	.000
Family	4-28	315	12.95(6.61)	148	12.68(6.30)	165	13.21(6.86)	.473	196	12.07(6.39)	119	14.41(6.72)	.002
Finances	2-14	319	5.19(3.33)	151	4.97(3.21)	166	5.37(3.43)	.278	198	4.56(3.00)	121	6.22(3.58)	.000
Leisure activities	5-35	305	18.43(7.18)	144	17.47(7.28)	159	19.36(6.95)	.021	190	16.74(6.75)	115	21.23(7.02)	.000
Living situation	1-7	323	2.37(1.80)	153	2.25 (1.81)	168	2.48(1.78)	.271	200	2.00(1.54)	123	2.99(2.02)	.000
Safety	4-28	314	14.90(6.29)	146	14.24(6.26)	166	15.49(6.28)	.080	194	13.95(6.14)	120	16.43(6.26)	.001
Social relations	3-21	314	12.23(4.30)	148	11.72(4.28)	164	12.70(4.27)	.043	195	11.50(4.25)	119	13.42(4.13)	.000
Global item	1-7	322	3.35(1.90)	153	3.22(1.85)	167	3.46(1.93)	.260	200	2.88(1.69)	122	4.12(1.97)	.000

† Numbers may not sum to total as a result of missing data

3.3. Mediating Role of Subjective Quality of Life

Total SQoL and SQoL subdomains were assessed as potential mediators of the relationship between parenting and depression. A simple mediation model illustrating all the pathways can be found in Figure 3-1.

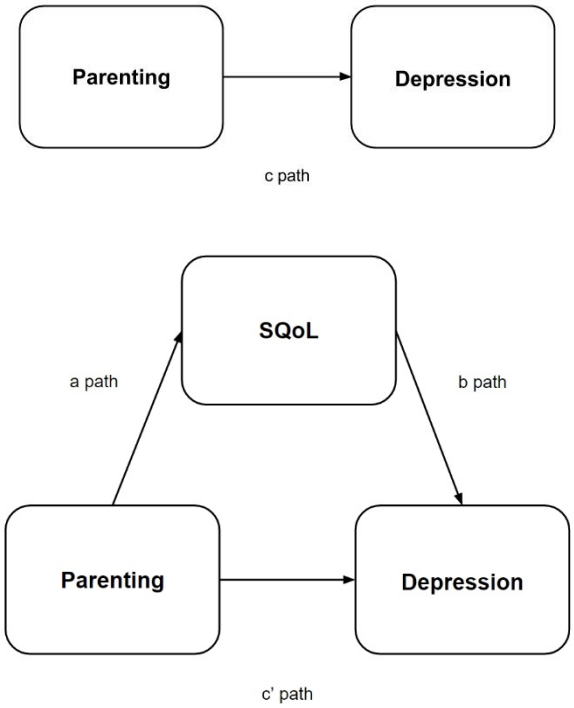

Figure 3-1. A Conceptual Diagram of a Simple Mediation Model Illustrating the Pathways in the Relationship between Parenting, Depression and SQoL

The independent variable is parenting which indicates whether the women have dependent children or not; the dependent variable is current major depression as diagnosed using M.I.N.I.; and the potential mediating variable is total SQoL score and life subdomains as measured by self-reported QoLI-20. The top portion of Figure 3-1 represents the total effect of parenting status on depression (c path), whereas the bottom portion represents the model including the potential mediator SQoL. c' path represents the direct effect of parenting status on depression after controlling for SQoL. The effect of parenting status on SQoL is represented by a path, and the effect of SQoL on depression,

controlling for parenting status, is represented by b path. Finally, the indirect effect is the product of a path and b path.

In general, the relationship between the paths can be explained by equation

Total effect (c) = direct effect (c') + indirect effect (a*b);

where indirect effect (a*b) is equivalent to the difference between total effect and direct effect (c – c') (Rucker, Preacher, Tormala, & Petty, 2011; VanderWeele & Vansteelandt, 2010).

Thus, the proportion mediated can be calculated with

P_M = (a*b) / [(a*b) + c'] (MacKinnon, Warsi, & Dwyer, 1995; VanderWeele & Vansteelandt, 2010).

Table 3-3. Summary of Results Assessing the Mediating Role of SQoL on the Relationship between Parenting and Depression

(A)	(B) Effects of Parenting on SQoL (a path)	(C) Effects of SQoL on Depression (b path)	(D) Effects of Parenting on Depression			(E) Evidence of mediation
			(i) Total effects (c path)	(ii) Direct effects (c' path)	(iii) Indirect effects (a*b)	
SQoL subdomains (Mediators)	**B (95% CI)**	**B (95% CI)**	**B (95% CI)**	**B (95% CI)**	**B (95% CI)**	**Is c > c'?**
Total	-2.38 (-7.85, 3.10)	-0.04 (-0.05, -0.02)**	0.32 (-0.25, 0.88)	0.30 (-0.30, 0.90)	0.09 (-0.11, 0.33)	Yes
Family	-0.57 (-2.18, 1.05)	-0.06 (-0.10, -0.02)**	0.49 (-0.06, 1.03)!	0.47 (-0.08, 1.02)!	0.03 (-0.06, 0.17)	Yes
Finances	-0.39 (-1.19, 0.41)	-0.15 (-0.23, -0.08)**	0.53 (-0.01, 1.06)!	0.49 (-0.05, 1.04)!	0.06 (-0.07, 0.21)	Yes
Leisure activities	-1.46 (-3.39, 0.09)!	-0.10 (-0.14, -0.06)**	0.53 (-0.02, 1.08)!	0.43 (-0.15, 1.00)	0.16 (-0.01, 0.38)	Yes
Living situation	0.07 (-0.35, 0.50)	-0.35 (-0.49, -0.20)**	0.57 (0.03, 1.10)*	0.64 (0.08, 1.20)*	-0.03 (-0.19, 0.13)	No
Safety	-0.30 (-1.80, 1.20)	-0.06 (-0.10, -0.02)**	0.59 (0.04, 1.13)*	0.59 (0.03, 1.14)*	0.02 (-0.07, 0.14)	No
Social relations	-0.44 (-1.44, 0.57)	-0.12 (0.19, -0.06)**	0.49 (-0.06, 1.03)!	0.47 (-0.09, 1.02)	0.05 (-0.07, 0.21)	Yes
Global	-0.10 (-0.55, 0.35)	-0.39 (-0.53, -0.25)**	0.57 (0.03, 1.10)*	0.59 (0.02, 1.15)*	0.04 (-0.14, 0.23)	No

** P ≤ .01; * P ≤ .05; ! P ≤ .10

B: unstandardized regression coefficient

Models are adjusted for the confounding effects of age, race, education, social support, marital status and current alcohol or other drug dependence.

Column A shows the eight SQoL models, followed by columns B to D where unstandardized coefficients (B) and corresponding 95% confidence intervals (CI) of various pathways are shown. The last column (E) indicates whether there is any evidence of mediation. All models were adjusted for potential confounders.

As shown in Table 3-3, parenting status was predictive of SQoL and a trend was observed where women with dependent children reported lower SQoL compared to women with no dependent children. Parenting exhibited reduction in leisure activities (B = -1.46; 95% CI = [-3.39, 0.09]; $p < .10$) where study participants with dependent children scored leisure activities on average 1.5 points lower than participants with no dependent children. Furthermore, participation in leisure activities was strongly predictive of depression (B = -0.10; aOR = 0.90, 95% CI = [0.87, 0.94]). In other words, each point reduction in the leisure activities mean score, the odds of having depression was expected to increase by 11%.

Besides leisure activities, all other SQoL subdomains were negatively associated with depression ($p < .01$). Every point decrease in SQoL score corresponded to an increasing odds of depression of a minimum of 4% to a maximum of 16%. For example, every point decrease in finances was expected to increase the odds of depression by 16% while each point decrease in social relations was expected to increase the odds of depression by 13%.

A test of the significance of indirect effect (a*b) for each model (Column D iii) indicated no statistically significant mediation. However, evidence of mediation was present as indicated by a reduction in total effects of parenting on depression (Column E).

As shown in Figure 3-2 to 3-6, reductions in total effects were found in total SQoL, subdomains family, finances, leisure activities and social relations. Total SQoL (the combined effects of all SQoL subdomains) accounted for 23% of the variance in depression. Family explained 6% of the variance, followed by social relations at 10% and finally, finances at 11%. While family, social relations and finances each accounted for a smaller proportion of variance, leisure activities accounted for the largest proportion of the variance in depression at 27%. In other words, 27% of the effect of parenting on depression was mediated indirectly through leisure activities, and 73% of the effect was direct. Living situation, safety, and global life satisfaction failed to account for any proportion of variance in depression.

It is important to note that the direct effects of parenting on depression may include the effects of mediators not accounted for in the models. Furthermore, although values were available in over 97% of the observations for most of the variables, the exceptions were the 12% missing observations for total SQoL and the 6% for leisure activities. Mean imputation method is recommended to handle missing values (Patterson et al., 2013) but it was not performed because mediation macro PROCESS is not integrated with the missing data imputation routine in SPSS (Hayes, 2013). Therefore, missing values were deleted from the analyses through the use of the SPSS default command "listwise deletion".

Omitting the cases with missing values of greater than 10%, such as those of total SQoL, could create selection bias and misleading results (Bennett, 2001). Thus analyses for total SQoL should be interpreted cautiously.

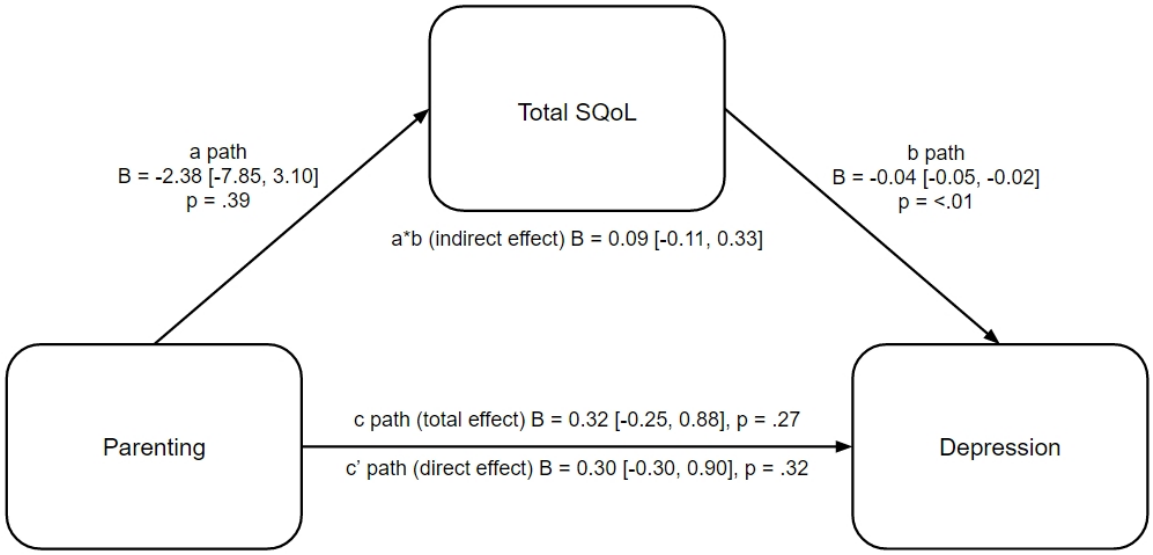

Figure 3-2. Mediation of Parenting and Depression by Total SQoL

Total effect (c): Effect = 0.32, p = .27, LLCI = -0.25, ULCI = 0.88; Direct effect (c'): Effect = 0.30, p = .32, LLCI = -0.30, ULCI = 0.90; Indirect effect (a*b): Effect = 0.09, Boot LLCI = -0.11, Boot ULCI = 0.33. The attenuation of the total effect from 0.32 to 0.30 (aOR = 1.38 to 1.35) suggested that mediation had occurred and that 23% of the effect of parenting on depression was mediated indirectly through total SQoL.

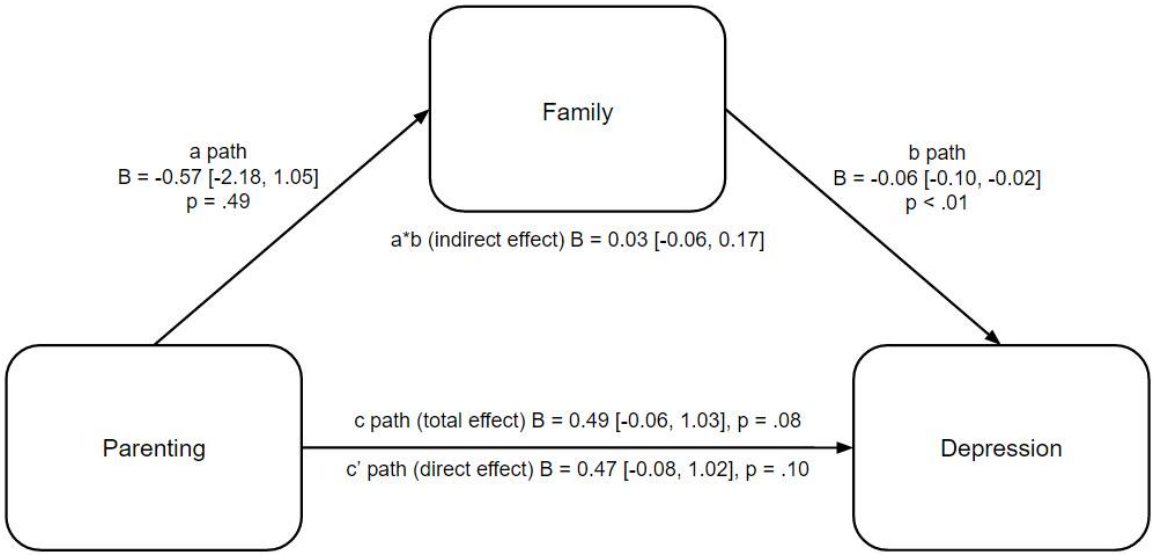

Figure 3-3. Mediation of Parenting and Depression by Family

Total effect (c): Effect = 0.49, p = .08, LLCI = -0.06, ULCI = 1.03; Direct effect (c'): Effect = 0.47, p = .10, LLCI = -0.08, ULCI = 1.02; Indirect effect (a*b): Effect = 0.03, Boot LLCI = -0.06, Boot ULCI = 0.17. The attenuation of the total effect from 0.49 to 0.47 (aOR = 1.63 to 1.60) suggested that mediation had occurred and that 6% of the effect of parenting on depression was mediated indirectly through family.

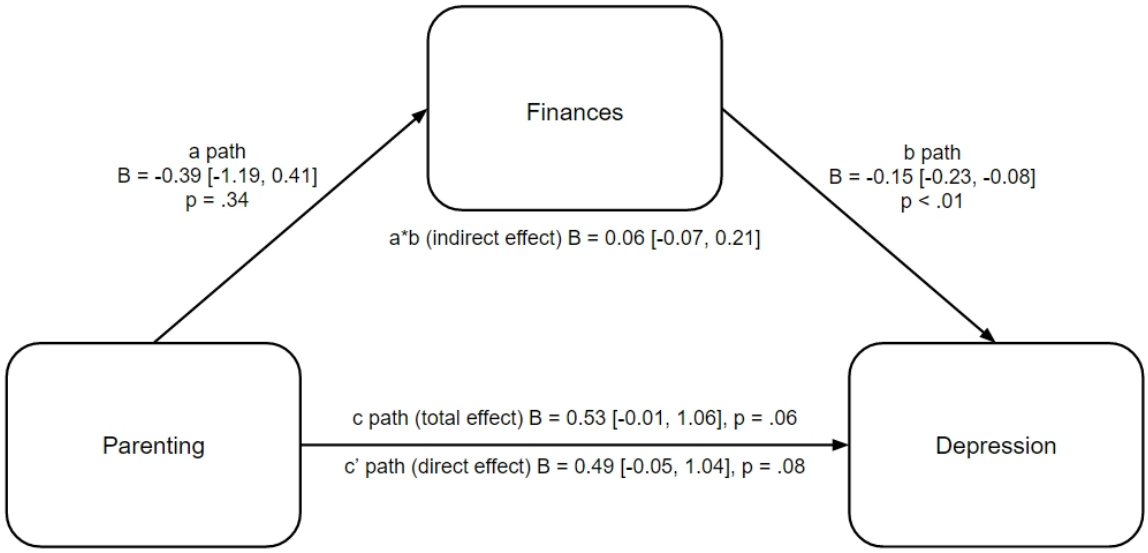

Figure 3-4. Mediation of Parenting and Depression by Finances

Total effect (c): Effect = 0.53, p = .06, LLCI = -0.01, ULCI = 1.06; Direct effect (c'): Effect = 0.49, p = .08, LLCI = -0.05, ULCI = 1.04; Indirect effect (a*b): Effect = 0.06, Boot LLCI = -0.07, Boot ULCI = 0.21. The attenuation of the total effect from 0.53 to 0.49 (aOR = 1.69 to 1.64), suggested that mediation had occurred and that 11% of the effect of parenting on depression was mediated indirectly through finances.

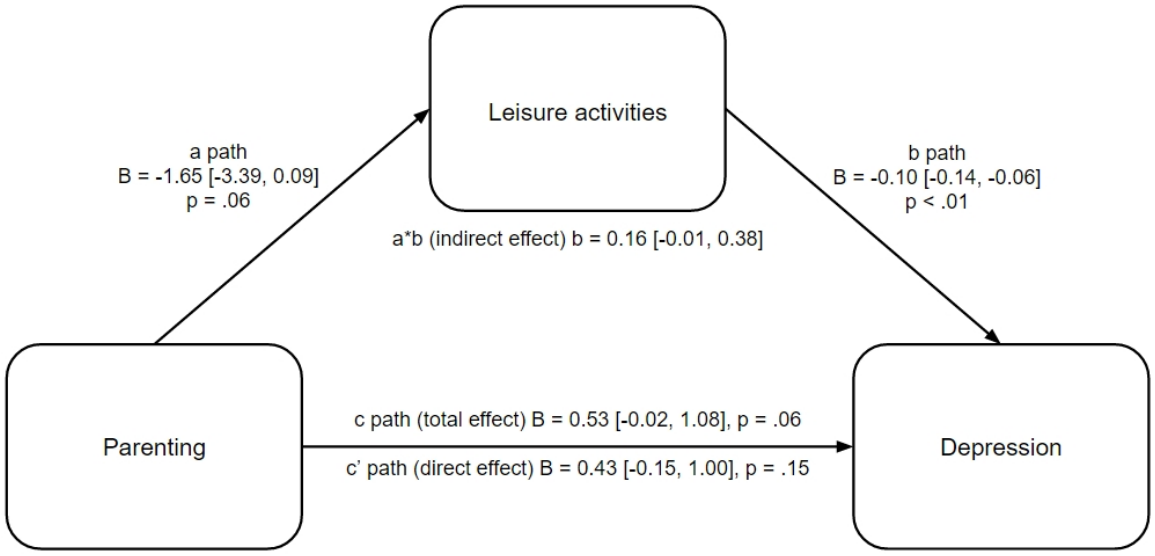

Figure 3-5. Mediation of Parenting and Depression by Leisure Activities
Total effect (c): Effect = 0.53, p = .06, LLCI = -0.02, ULCI = 1.08; Direct effect (c'): Effect = 0.43, p = .15, LLCI = -0.15, ULCI = 1.00; Indirect effect (a*b): Effect = 0.16, Boot LLCI = -0.01, Boot ULCI = 0.38. The attenuation of the total effect from 0.53 to 0.43 (aOR = 1.70 to 1.53) suggested that mediation had occurred. Notably, 27% of the effect of parenting on depression was mediated indirectly through leisure activities.

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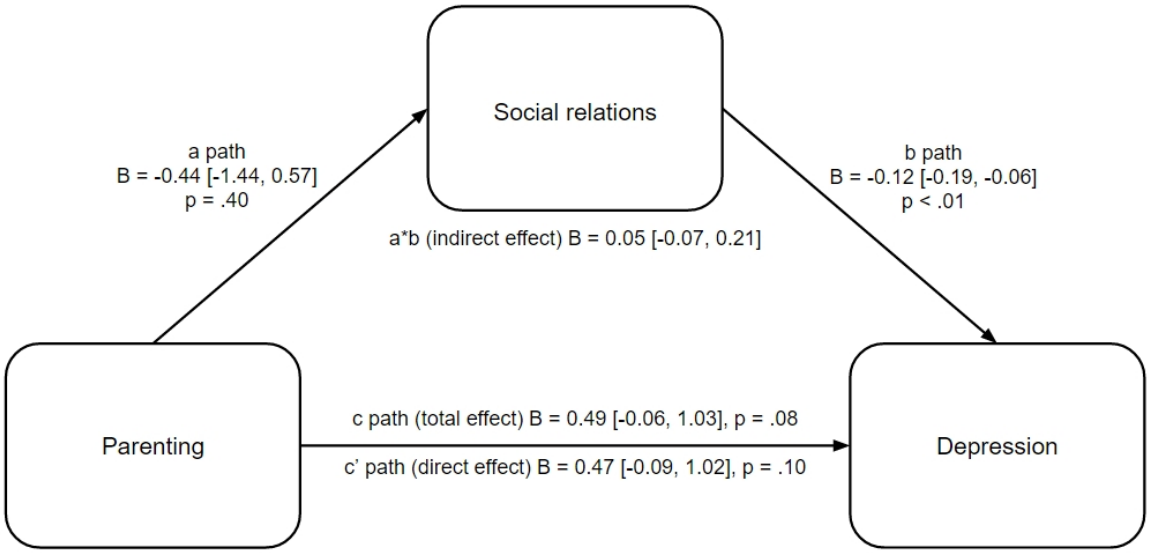

Figure 3-6. Mediation of Parenting and Depression by Social Relations
Total effect (c): Effect = 0.49, p = .08, LLCI = -0.06, ULCI = 1.03; Direct effect (c'): Effect = 0.47, p = .10, LLCI = -0.09, ULCI = 1.02; Indirect effect (a*b): Effect = 0.05, Boot LLCI = -0.07, Boot ULCI = 0.21. The attenuation of the total effect from 0.49 to 0.47 (aOR = 1.63 to 1.59) suggested that mediation had occurred and that 10% of the effect of parenting on depression was mediated indirectly through social relations.

Chapter 4. Discussion

4.1. Socio-demographic Characteristics of Homeless Mothers

The sociodemographic characteristics of a sample of Canadian homeless women experiencing homelessness for over two years were found consistent with findings of prior studies (Montgomery et al., 2011; North & Smith, 1994). In this study, the women were mostly between the age of 25 and 45 with an average age of 39, ethnic minority, either single or never married, never completed high school, and less likely to have current AOD dependency but more likely to have depression.

Studies involving homeless families headed by single women found that mothers were mostly in their mid-20s and late 30s, and were younger than women with no dependent children (Chambers et al., 2014; Montgomery et al., 2011; Smith & North, 1994; Zugazaga, 2008). Similarly, the mean age of homeless mothers in the current study was 36, as compared to 43 for women with no dependent children. Other sociodemographic characteristics of homeless mothers such as their minority background and their marital status were found to be consistent with literature on homeless women (Chambers et al., 2014; Montgomery et al., 2011). The low level of social support found in the present study (54%) reaffirmed that homeless mothers tend to be socially isolated (Choi & Snyder, 1999; Raikes & Thompson, 2005; Whitzman, 2006).

4.2. Mental Health Conditions of Homeless Mothers

In this study, mothers evidenced significantly higher rates of depression compared to the women who had no dependent children. Seventy-three percent of homeless mothers had been diagnosed with current major depression, compared to 52% of women without dependent children. This proportion is congruent with existing literature, in which homeless mothers' depression rates have been reported to be between 45% and 85% (Bassuk et al., 1998; Weinreb et al., 2006).

Alcohol or drug dependency is pervasive. Eighty-one percent of mothers in the present study were diagnosed with current AOD dependency. Montgomery et al. (2011) and Welch-Lazoritz et al. (2015) also found high rates of AOD dependency among a sample of homeless mothers. However, the effects in both studies were confounded by the mothers' housing types (Welch-Lazoritz et al., 2015; Montgomery et al., 2011). In this analysis, all women were homeless and more complete data for housing types were unavailable. Therefore, the high rates of substance dependency among homeless mothers in this sample must be interpreted cautiously. In addition, the high rates could be attributed to mother-child separations as mothers who had separated from their children were more likely to turn to substances and self-medicate (Shier, Jones, & Graham, 2011). Lastly, McPherson et al. (2007) found that alcohol and drug use is significantly related to domestic violence. As large proportion of homeless mothers suffered from domestic violence prior to becoming homeless, the high rates of AOD dependency may be a result of their domestic violence history. The viability of the above explanations cannot be assessed at this time because data regarding whether mothers were caring for their dependent children and data on the pathway to homelessness were not available.

4.3. Subjective Quality of Life of Homeless Mothers

SQoL is multidimensional and can be interpreted as how well human needs are met and how individuals perceive own satisfaction in various life domains (Costanza et al., 2008). SQoL subdomains appear relevant to Maslow's hierarchy of needs (Maslow, 1943): that is, in addition to basic physiological needs such as food, water and shelter, fulfilling other needs including safety, social, self-esteem, and self-actualization is also important (Sirgy, 1986; Costanza et al., 2008). Maslow posited that, the lowest needs level must be satisfied first before the next can be fulfilled and that as needs levels are met, life satisfaction increases. Consequently, the higher the need level that is satisfied, the greater the QoL will be (Sirgy, 1986).

Cummins et al.'s (2004) contested that Maslow's levels of needs are not necessarily related to QoL. However, the results of bivariate analysis in the present study suggested otherwise. Specific SQoL subdomain scores reported by homeless mothers were in the low to neutral range which corresponded to their low attainment of needs. The

lower SQoL results of the present study reported by homeless mothers were aligned with Montgomery et al.'s (2011) findings where it was found that homeless women with dependent children consistently experienced lower SQoL compared to homeless women with no children or with adult children. The low SQoL scores reported by homeless mothers were not surprising. Homeless mothers' basic physiological needs were not satisfied as they are constantly fighting to obtain the lowest level of needs such as securing stable housing and providing adequate nutrition and clothes for not only themselves but also their children. Also found in this study was that homeless mothers' higher level of needs such as social and self-esteem appeared to be not satisfied either. Their dissatisfaction with their social relationships and self-esteem was reflected in their significantly low social relations and leisure activities scores, as compared to that of homeless women without dependent children, thus providing further support for Maslow's theory that mothers' low attainment of needs corresponds to their low SQoL scores.

4.3.1. Social Relations

Mothers' significantly lower SQoL scores in social relations provided support that their social networks are exhausted and that any residual support networks are more distant and less supportive compared to those of homeless women without children and as well, to those of poor-but-housed single mothers (Toohey, Shinn, & Weitzman, 2004). The present findings corroborate those of Maibach (2013) who found that homeless mothers have low level of social support, as well as findings by Zugazaga (2008) who compared the social support across various homeless populations and found that women with children reported lower social support compared to women without children. Contrarily, Chambers et al. (2014) compared women's perceived social support by parenting status and found that women with dependent children reported higher perceived access to social support. The authors were unable to confirm but speculated that their findings which differed from the social support literature may be attributed to mothers' greater access to formal services available to homeless families only.

The benefits of social support are well-established (Bassuk et al., 2002; Cohen & Willis, 1985). However, some social relationships may be associated with adverse outcomes. Unhealthy relationships increase risk for poor social and emotional health

(Lazarus, Chettiar, Deering, Nabess, & Shannon, 2011; Nyamathi, Leake, Keenan, & Gelberg, 2000), and may bring on strong judgements by others regarding a homeless mother's willingness and ability to protect her children (Blegen, Hummelvoll, & Severinsson, 2010). The failure to live up to the standard of good mothering would further impair mothers' already low self-esteem and confidence (Blegen et al., 2010). Nevertheless, having strong social support networks is generally beneficial (Bogard, McConnell, Gerstel, & Schwartz, 1999), especially among homeless mothers who have to bear full childcare responsibility and face various burdens, ranging from housing instability, to lack of childcare services, to stigma and discriminations from society, shelter staff, and service providers (Montgomery et al., 2011; Tischler et al., 2007).

4.3.2. Leisure Activities

In the present study, besides feeling significantly less satisfied with their social relationships, homeless mothers, compared to women with no dependent children, also reported significantly less satisfaction with their leisure activities. This result is consistent with Montgomery et al.'s findings (2011) where women with dependent children reported the poorest SQoL in leisure activities compared to women with older children and women without children.

Leisure activities are related to Maslow's social needs in that engaging in leisure activities foster social interactions and the development of support networks. Some homeless mothers may have been able to form new social networks with other homeless mothers who live in the same shelter, and thus cope better with negative life circumstances. However, in general, homeless mothers lack people whom they can trust (Tischler et al., 2007). Brown, Brown, Miller, and Hansen (2001) explained that, without trustworthy persons who can mind their young children, mothers are unable to actively participate in leisure activities that could potentially rebuild their social support networks.

Besides theorizing that greater needs attainment corresponds to greater life satisfaction, Maslow's theory also specified that all individuals intuitively reach for their full potential in a stepwise manner. Although the needs levels are not ranked by order of importance, lower level basic physiological needs must be fulfilled before higher order needs can be attained (Herman, 1995). In contrast to Maslow's stepwise attainment

principle, Biswas-Diener and Diener (2006) found that even when basic physiological needs are not met, attaining higher needs levels such as social and self-esteem needs could mitigate the negative aspects of unfulfilled basic needs (Tay & Diener, 2011; Biswas-Diener & Diener, 2006), thus averting the psychological effects associated with deprivation of basic needs (Biswas-Diener & Diener, 2006). In other words, homeless mothers preoccupied with satisfying lower level needs such as shelter, food and safety, could potentially benefit from having their social needs met through improved social relations and greater participations in leisure activities, thus resulting in increased life satisfaction and improved mental health.

4.4. Subjective Quality of Life and Depression among Homeless Women

The fulfillment of needs in Maslow's hierarchy is associated with mental well-being (Herman, 1995). With every fulfilled needs level, life satisfaction and mental well-being also increase. As a result, those who reach the top of the needs hierarchy can experience complete life satisfaction and the greatest mental health (Herman, 1995).

The results of the present study were consistent with Maslow's theory where associations were found between SQoL and mental health. Women with lower SQoL were more likely to have increased mental health issues such as major depression compared to women with higher SQoL. The present findings were also consistent with those of Sullivan et al. (2000) where it was determined that among homeless individuals with and without mental illness, those who reported lower SQoL are more likely to have mental illness.

The relationship between SQoL and depression is observed across various populations. For example, Headey, Kelley, and Wearing (1993) explored the various facets of mental health among the general population and found strong associations between increased life satisfaction and lower depression rates; Lam and Rosenheck (2000) also found the same relationship among a sample of homeless individuals with serious mental illness. Also found by Lam and Rosenheck (2000) was that improvements in SQoL corresponded to decreased depression rates.

While the association between SQoL and depression was established, research exploring the associations among SQoL, depression and parenting were limited. Camasso (2003), however, did find that among homeless mothers, improvements in QoL were associated with improvements in depression.

Homeless mothers' low QoL and poor mental health were explained by their low needs attainments according to Maslow's hierarchy of needs theory. The theory may provide further understanding in the associations between homeless mothers' SQoL and depression. Specifically, the theory may provide insights into the role of SQoL in mediating the relationship between parenting and depression among homeless women.

4.5. Mediating Role of Subjective Quality of Life

Mediation analysis results revealed that a portion of the variance in high rates of depression among homeless mothers explained by parenting status was mediated by SQoL. Specifically, total SQoL (the combined score of all subdomains), finances, family, social relations, and leisure activities mediated the relationship between parenting and depression among homeless women who have experienced chronic homelessness. Living situation, safety and global SQoL did not show evidence of mediation.

4.5.1. Living Situation and Safety

Given that living situation is part of basic physiological needs and that safety of environment is a need above basic physiological needs, the absence of mediation by living situation and safety was surprising. One explanation for the lack of mediation by living situation may be that the one-item scale used to measure living situation may not be sensitive enough to discern the differences in living arrangements among the women. Although no studies have analyzed the mediating role of living situation on depression among homeless individuals, prior studies that compared the SQoL of housed and homeless individuals indicated that overall life satisfaction increases after being housed (Bebout, Drake, Xie, McHugo, & Harris, 1997; O'Connell, Rosenhoek, Kasprow, & Frisman, 2006; Wolf et al., 2001; Lehman, Slaughter, & Myers, 1991). At the time of the study, the participants were all homeless, therefore it could be that satisfaction with living

situation remained the same and also the effects cannot be examined due to the cross sectional aspect of the present study. Another viable explanation may be that living situations was not primary needs. Past research had found that housing did not influence life satisfaction (Schutt, Goldfinger, & Penk, 1997). Instead, quality of housing affected satisfaction with living situations specifically (Patterson et al., 2013).

Besides impacting satisfaction with living situations, good quality housing also leads to an increased satisfaction with safety among homeless individuals (Patterson et al., 2013). Perron et al. (2008) also found that safety was a mediator of depression among homeless adults. The lack of mediation by safety on depression in the present study may be explained by homeless mothers' history with domestic violence. Mothers who escaped from domestic violence had voiced that, albeit homeless, they felt safer after leaving their abusive partner (Bridgman, 2002). Future research using a longitudinal approach and improved measurement is necessary to explore the mediating role of living situation and safety on mental health among homeless mothers.

4.5.2. Finances

Homeless mothers' satisfaction with finances was found to account for 11% of their depression explained originally by parenting status. The current findings corroborate those of Inglehart and Klingemann (2000) who found that money impacts mental health especially among those living in poverty. Homeless mothers live in extreme poverty. According to Maslow's theory, the mothers' poor mental health will persist until their basic needs are satisfied. Similarly to findings by Biswas-Diener and Diener (2006), Raikes and Thompson (2005) found that Maslow's social needs are equally important to meeting basic needs and that mothers' response to financial strain may also be affected by their level of social support (Raikes & Thompson, 2005).

In the present study, the measured social support between mothers and women without children did not differ significantly. This lack of difference may be a limitation of this study where social support, a multidimensional concept, was measured simply by whether participant had at least one close confidante whom she can rely on. Nevertheless, Raikes and Thompson (2005) had found that mothers with higher level of social support feel less emotional distress associated with poverty than mothers who lack

social support. This suggested that fulfilling social needs of homeless mothers will offset the adverse effects of unfulfilled basic needs as well as financial strains on the mental health of homeless mothers.

4.5.3. Social Relations and Family

Social support is a strong predictor of mental well-being (Bassuk et al., 2002; Cohen & Willis, 1985). It is therefore not surprising that family and social relationships, both related to Maslow's higher level social needs, mediated the effects of parenting on depression. Current social support literature had found that majority of homeless mothers lack social support (Mowbray et al., 2000; Zugazaga, 2008; Maibach, 2013) but have overlooked the nature of social connections of homeless mothers (Bassuk et al., 2002). Bassuk et al. (2002) compared the effects of kin and non-kin supports on mental health among homeless mothers and found that family relationships were strongly related to mental health. In particular, conflicts with mothers corresponded to an approximately nine fold increase in depression while supports from mothers were associated with an approximately five fold improvement in depression (Bassuk et al., 2002). Supports from intimate partners, friends and siblings were, however, not predictive of depression (Bassuk et al., 2002). Furthermore, both Maibach (2003) and Shier et al. (2011) found that homeless mothers may also rely on their children for social support and thus affecting their mental health.

In sum, findings of the present study suggested that improving homeless mothers' satisfaction with social and family relationships will lead to improvements in their depression. The present study did not account for the type of relationships available to homeless mothers. Dissatisfaction with family or social relationships as reported in the present study may mean an absence of social support or may also indicate weak and negative interactions such as conflicts with family members. Future research exploring specific relationships important to homeless mothers and how each type of relationship affects their mental health is recommended.

4.5.4. The Importance of Leisure Activities

The results of the present study had suggested that leisure could be the most important SQoL subdomain for homeless mothers. Not only is leisure related to Maslow's social needs level, but also affects self-esteem, a higher needs level above social. According to Maslow, social needs such as the needs for love and belongingness are fundamental to achieving greater satisfactions in life and better mental health (Maslow, 1943). Maslow's theory thus partially explained the current findings where participation in leisure activities accounted for 27% of the effects of parenting on depression. The results of the present study supplemented the findings of Pondé and Santana (2000) who found that poor women who engaged in more leisure activities experienced a reduction in depression compared to those who participated in fewer leisure activities.

Maibach (2003) had identified leisure as activities that include relaxation as a key component. QoLI-20, however, focus also on mothers' satisfaction with leisure time (Uttaro & Lehman, 1999). Mothers expressed dissatisfactions with the amount of time available for fun, relaxation, and doing things they want to do. They are also unhappy with the way they spent their spare time and with the lack of opportunities for enjoyment (Uttaro & Lehman, 1999). All homeless mothers have low socioeconomic status. They are mostly single, socially isolated (Zugazaga, 2008; Maibach, 2013), and therefore must bear all of the childcare burdens. Caring for children is an enormous responsibility and is time consuming. It is, therefore, not surprising that the mothers in this study were unable to engage in leisure and reported high dissatisfaction with their leisure compared to homeless women without dependent children.

In prior research, homeless women who expressed high dissatisfaction with their leisure felt a lack of autonomy and lack of choice in participating in leisure activities (Maibach, 2003). This may be especially true for homeless mothers because ethic of care theory dictates that mothers care for their child and disregard own wants and needs (Maibach, 2003). As mothers prioritize their children's needs over other facets of life, it becomes more difficult to engage in leisure activities (Bialeschki & Michner, 1994). Furthermore, mothers feel guilty when engaging in leisure activities without their children (Maibach, 2003). However, Maibach (2003) also reported that, when given the chance, mothers would enjoy leisure activities without their children.

Homelessness impairs mothers' self-esteem and leads to feelings of powerlessness and hopelessness. Participating in leisure provides a sense of purpose and belonging. To have control and choice over which leisure activity to engage in is empowering and increases self-esteem. The benefits of engaging in leisure is multifold. Not only does it increase self-esteem, but also helps mothers resist gender-based expectations where mothers are expected to care for children instead of having fun. It also allows mothers to escape temporarily from stressors and increases belongingness when mothers involved themselves as community members. To increase a sense of belonging and partially fulfill their social needs, homeless women are motivated to engage in leisure activities. Whether they actually engage in leisure activities, however, is impeded by their low socioeconomic status (Pondé & Santana, 2000).

In summary, this study found that women with dependent children who had experienced long-term homelessness have significantly low satisfaction in many life domains compared to women without dependent children. Their dissatisfactions with certain life domains led to an increase in their depression rates. The findings of the present study highlighted the potential importance of providing supports to homeless mothers, so as to improve their SQoL and depression. Specifically, the study supported the idea that leisure could help homeless mothers feel less depressed.

4.6. Implications of Findings and Future Research

This research builds upon previous work (Zabkiewicz et al., 2014) by delineating factors that contribute to homeless women's high rates of depression. The findings demonstrate the importance of factoring in both parenting status and QoL as predictors of depression among homeless women. It was demonstrated that the effects of parenting are mediated by total SQoL and SQoL subdomains family relations, finances, leisure activities, and social relations to affect depression.

4.6.1. Study Implications

Homeless mothers are ideal targets for QoL interventions. According to the mothers who participated in Scheyett and McCarthy's study (2006) on mental health

service needs, there was a lack of focus in improving their QoL in regards to their higher order social needs. Maibach (2003) also found that while programs exist to address basic physiological needs such as food, shelter and clothing, fewer programs focus on the less immediate social and esteem needs. The results of the present study also call for an increased awareness of the QoL needs of homeless mothers, particularly the barriers experienced by this population regarding access to leisure activities.

When living in homeless shelters, leisure options are limited, and the greatest lack of resource was not having a home. Activities associated with having a home, such as having visitors and spending time with friends, were difficult for mothers to participate in (Maibach, 2003). The research on the effects of housing on QoL had mainly focused on individuals with severe mental illness and had revealed mixed results (Hubley et al., 2012; Lehman, Kernan, DeForge, & Dixon, 1995; Lehman et al., 1991; Bebout et al., 1997; Gilmer, Stefancic, Ettner, Manning, & Tsemberis, 2010; Schutt et al., 1997; Blid & Gerdner, 2006; O'Connell et al., 2006; Marshall, Burnam, Koegel, Sullivan, & Benjamin, 1996). Nevertheless, while in shelters, homeless mothers' leisure was inhibited by poverty and a lack of autonomy (Maibach, 2003). Therefore, attention must be paid to increase leisure access to improve depression rate.

Maibach (2003) also found that mothers' leisure is inhibited by ethic of care. Mothers engaged in leisure more readily without their children, if given the chance (Maibach, 2003). As such, offering daycare for few hours a day could facilitate mothers' participation in leisure activities in which they can relax, interact, and grow their social support networks. Often, the actual leisure activities mothers participate in were not ideal, but substitutes for unattainable activities remained beneficial. In Maibach's study (2003), homeless women, constrained by low financial resources, found it difficult to engage in preferred activities such as fishing, shopping and dining. They instead looked for free activities such as activities associated with community festivals, park spaces, extended library hours, and free movie nights (Maibach, 2003). Therefore, offering free activities as well as activities that the entire family can enjoy might also provide homeless mothers an opportunity to connect with others, without the pressure of the ethic of care.

Besides poverty, lack of autonomy and pressure from ethic of care, mothers' depression may prevent them from participating in leisure. As one of the symptoms of

depression is to feel unmotivated in daily activities (APA, 2000), homeless mothers could benefit from evidence-based depression intervention such as cognitive-behavioural therapy (Cuijpers, Berking, Andersson, Quigley, & Kleiboer, 2013) or behavioural activation (Cuijpers, van Straten, & Warmerdam, 2007) which encourages individuals with major depression to engage in leisure activities and increase interactions with others (Cuijpers et al., 2007). As a result, when homeless mothers increase participation in meaningful activities, their depression will improve.

Obviously, leisure does not erase myriad hardships associated with homelessness and extreme poverty. Eliminating homelessness, however, would. The rise in family homelessness is linked to cutbacks in housing related services such as construction of social housing and provision of rental subsidy, therefore, building more affordable housing and adopting Housing First strategy for homeless mothers will put an end to their hardships. Furthermore, there should be a shift in focus on homeless prevention.

Family homelessness can be prevented by closing the gap between the cost of good quality housing and what homeless mothers can afford. Moreover, as poverty is the fundamental cause of all homelessness, mothers need more leverage to secure higher pay to ensure own financial security. Economic and social policies could be enacted to eliminate poverty. Economic policies to be pursued include eradicating wage disparity based on gender and race, providing education and job training, creating jobs and ensuring mothers can get full employment or adequate number of work hours to support their families, and providing quality child care services so that mothers do not have to struggle with ethic of care. In terms of social policies, providing a strong social safety net is vital for mothers, as is strengthening their social support network within the community.

There is no law indicating that having housing is a right (Howenstine, 1994). However, prevention of family homelessness becomes a moral issue when homelessness harms not only the mothers but also their children. Negative childhood experience related to homelessness includes losses of properties and relationships, disruptions to schooling and daily routines, exposures to harms and violence, and increased maternal depression (Grant et al., 2013). These losses have ill consequences on children's development, academics and behaviour (Grant et al., 2013, Karim et al., 2006). Therefore, it is imperative to prioritize homelessness prevention among mothers and their young children

in order to attenuate the intergenerational cycle of homelessness, poverty, mental illness, trauma and substance abuse.

4.6.2. Future Research Direction

Among the vast homelessness literature, studies on homeless mothers have received relatively little research consideration. Even fewer studies exist that explore the QoL of homeless mothers, much less the role of leisure activities. Identifying the impact of leisure on the depressive symptoms in homeless mothers should prompt additional research on leisure programs designed to improve homeless mothers' leisure. This area remains unexplored and presents opportunities for socially relevant research.

To assist with developing beneficial leisure programming, homeless mothers could be consulted in order to generate lists of desired leisure activities and identify which aspects of leisure are most important for improving their mental health. Studying how women in general use leisure to improve their QoL and maintain their mental well-being could also enhance the understanding of the needs of homeless women and inform effective leisure programming.

Some research suggests that Maslow's hierarchy of needs may need to be adapted for cultural differences, but Tay and Diener (2011) found that the same human needs exist across cultures. Nevertheless, the type of leisure activity that decreases depression in homeless women may differ across various contexts and cultures. Thus, understanding the specific circumstances of homeless mothers, especially those who have experienced long-term homelessness, may yield greater insights on their complex situations and on the impact of homelessness on their QoL and mental health.

4.7. Strengths and Limitations

The present study provided greater understanding of the associations between parenting and depression, within a context of prolonged homelessness. The study had several strengths and limitations which are presented below.

First, the AHS participants were randomly chosen, but homeless mothers may have been underrepresented as many are 'hidden'. Therefore, those who participated in the study may have had different demographic characteristics than those who did not.

Second, homeless mothers caring for their dependent children were not distinguished from homeless mothers not caring for their dependent children. It is also unclear whether women with no children were actually women who had lost custody of their children. It is an important distinction since losing custody of children has been associated with a negative effect on mental health (Butters & Erickson, 2003).

Third, special attention was paid to the women's evaluation of own overall SQoL and six specific life domains which provided a more comprehensive picture of their QoL. However, information about what each SQoL subdomain means specifically for the women was not gathered. By identifying such specificities, greater insight may be obtained into developing methods of improving specific life domains, in order to decrease the depression rate among homeless mothers. Also, Cummins (1995) and Missenden et al. (1995) demonstrated that a comprehensive estimate of life quality must comprise both subjective and objective attributes. The present study did not take into account the role of objective QoL. The potentially mediating role of objective QoL should be explored in future studies.

Fourth, psychological symptoms were assessed using the M.I.N.I., a validated diagnostic questionnaire. However, the inclusion criteria for participating in the AHS included a mental illness diagnosis which may have resulted in the overrepresentation of mental illness, and decreased external validity.

Fifth, the mediation analyses were performed using PROCESS macro. PROCESS offers many advantages. For example, it uses non-parametric procedure and bootstrapping strategy, which is the preferred method for testing the statistical significance of the mediation effect (Hayes, 2013). However, for mediation models with categorical outcomes such as the present study, total and indirect effects are scaled differently as path a was analysed using ordinary least square regression while paths b and c' used logistic regressions. Hayes (2013) therefore argued that total effect (c) is not equal to the sum of the direct and indirect effects (c' + a*b) while VanderWeele and Vansteelandt

(2010) demonstrated that the two terms are approximately equal assuming no statistical interaction between parenting and mediators are present. The approximation of the proportion mediated by SQoL is a limitation of the present study.

Sixth, the analyses were based on cross-sectional data. The directionality of the relationships cannot be determined. Depression may have contributed to parenting status; SQoL may have influenced parenting status. Furthermore, the temporal relations of SQoL with depression were also undetermined. While SQoL was found to be a strong predictor of depression such as in Shlay's longitudinal study (1994) where increased satisfaction in SQoL subdomain finances led to improvements in mental health among the homeless population and in Bassuk et al.'s (2002) where social relationships strongly predicted depression among homeless mothers, other studies (Lehman, 1996; Sullivan et al., 2000) had found the reverse which is that depression is a strong predictor of SQoL. It is, therefore, important to bear in mind that cross sectional data are uninformative about causal order. To establish causal directions, longitudinal studies should be conducted.

Lastly, although the findings of this study suggest that leisure may improve the mental health of homeless mothers, some women may find it difficult to participate in leisure due to adverse experience. For example, homeless mothers who experienced intergenerational consequences of homelessness may face deep-seated trauma of social, economic and/or psychological nature, or they may experience an absence of secure attachment, which result in difficulties in maintaining relationships and forming strong social support network.

The various limitations must be kept in mind when interpreting the findings from this study. Despite the study's limitations, the findings had further the knowledge on the challenges encountered by homeless women. Results from this study provide impetus for identifying the SQoL subdomains important to homeless women with dependent children and understanding the complex relationship between parenting and depression. The results also had indicated the importance of further exploration of the mediating role of QoL on the effects of parenting status on depression. Lastly, this study had emphasized the need for policy and intervention efforts to promote leisure activities and good mental health among homeless women, especially those with dependent children.

4.8. Conclusion

Homeless mothers represent an extremely vulnerable population. Many become homeless when the lack of affordable housing coincides with poverty (Biel et al., 2014). While residing in homeless shelters, mothers' coping abilities are further taxed as they are vulnerable to a "fishbowl" effect due to parenting in a highly visible and stressful environment (Friedman, 2000). Mental health problems, thought to be rooted, in part, in an undermining of mothers' feelings of competency as a parent, are also prevalent (Seltser & Miller, 1993).

In this study, homeless mothers reported high rates of depression and low SQoL in all aspects of life. The findings suggested that homeless mothers experienced low levels of satisfaction in their finances, leisure activities, family, and social relationships, and that these factors, when improved, could lead to improvements in their high depression rates.

The results highlighted specific SQoL subdomains that could be targeted with programs and interventions, and, furthermore, identified the needs to encourage homeless mothers' engagement in leisure activities and their integration into social networks. Failure to recognize these unique needs and complex circumstances of homeless mothers may contribute to the intergenerational consequences of homelessness and mental health issues.

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Appendix A.

Baron and Kenny's Causal Step Approach

	Model 1			Model 2			Model 3			Model 4		
	aOR	95% CI	P	aOR	95% CI	P	aOR	95% CI	P	aOR	95% CI	P
Race												
Minority	1.55	(0.94, 2.58)	.09	1.76	(1.00, 3.09)	.05	1.77	(1.04, 3.01)	.03	1.65	(0.98, 2.78)	.06
Age (years)			.94			.64			.86			.95
25-45	0.96	(0.38, 2.39)	.93	1.45	(0.55, 3.79)	.45	1.09	(0.44, 2.73)	.85	1.15	(0.46, 2.90)	.76
≥45	0.87	(0.33, 2.30)	.78	1.66	(0.58, 4.74)	.34	0.92	(0.35, 2.44)	.87	1.11	(0.42, 2.95)	.83
High school education	1.01	(0.59, 1.71)	.98	0.66	(0.53, 1.72)	.88	1.00	(0.58, 1.73)	.99	0.94	(0.54, 1.63)	.82
Social support	1.12	(0.67, 1.85)	.67	1.45	(0.82, 2.57)	.21	1.17	(0.69, 1.98)	.57	1.18	(0.70, 1.98)	.54
Marital status			.05			.29			.09			.12
Married/partnered	1.07	(0.41, 2.79)	.89	1.79	(0.58, 5.51)	.31	1.21	(0.44, 3.33)	.71	1.22	(0.45, 3.35)	.70
Separated/widowed/divorced	2.19	(1.17, 4.10)	.02	1.58	(0.80, 3.12)	.19	2.06	(1.08, 3.91)	.03	1.95	(1.03, 3.67)	.04
Current AOD	3.51	(2.01, 6.12)	.00	2.91	(1.57, 5.38)	.00	3.28	(1.86, 5.79)	.00	3.31	(1.86, 5.90)	.00
Parenting status	1.74	(1.01, 3.00)	.05	1.31	(0.72, 2.39)	.39	1.56	(0.89, 2.74)	.12	1.62	(0.93, 2.82)	.09
SQoL domains												
Total SQoL				0.97	(0.95, 0.98)	.00						
Family							0.95	(0.91, 0.99)	.01			
Finances										0.87	(0.80, 0.94)	.00
Leisure activities												
Living situation												
Safety												
Social relations												
Global item												
Total effect (c)	0.55 (SE = 0.28)			0.55 (SE = 0.28)			0.55 (SE = 0.28)			0.55 (SE = 0.28)		
Direct effect (c')	-			0.27 (SE = 0.31)			0.45 (SE = 0.29)			0.49 (SE = 0.28)		
Indirect effect (c-c')	-			0.29			0.11			0.07		
Evidence of mediation?	-			YES			YES			YES		

	Model 5			Model 6			Model 7			Model 8		
	aOR	95% CI	P	aOR	95% CI	P	aOR	95% CI	P	aOR	95% CI	P
Race												
Minority	1.67	(0.97, 2.87)	.07	1.58	(0.94, 2.67)	.09	1.39	(0.83, 2.34)	.21	1.74	(1.03, 2.96)	.04
Age (years)			.99			.80			.95			.94
25-45	1.07	(0.42, 2.72)	.89	1.17	(0.45, 3.05)	.74	1.17	(0.46, 3.00)	.74	1.08	(0.41, 2.80)	.88
≥45	1.04	(0.38, 2.81)	.95	1.38	(0.49, 3.88)	.54	1.13	(0.42, 3.09)	.81	1.17	(0.42, 3.26)	.76
High school education	1.01	(0.57, 1.78)	.98	1.04	(0.60, 1.79)	.90	1.06	(0.62, 1.82)	.84	0.99	(0.58, 1.70)	.97
Social support	1.28	(0.75, 2.21)	.37	1.15	(0.68, 1.94)	.60	1.25	(0.74, 2.11)	.41	1.52	(0.88, 2.64)	.14
Marital status			.08			.14			.16			.13
Married/partnered	1.61	(0.57, 4.56)	.37	1.05	(0.38, 2.87)	.93	1.08	(0.41, 2.82)	.88	0.97	(0.38, 2.53)	.96
Separated/widowed/divorced	2.09	(1.07, 4.09)	.03	1.94	(1.01, 3.74)	.05	1.88	(0.99, 3.58)	.06	1.94	(1.02, 3.69)	.04
Current AOD	3.11	(1.71, 5.64)	.00	3.81	(2.13, 6.81)	.00	3.30	(1.88, 5.81)	.00	3.38	(1.90, 6.02)	.00
Parenting status	1.50	(0.84, 2.67)	.17	1.83	(1.04, 3.23)	.04	1.76	(1.01, 3.07)	.05	1.57	(0.90, 2.76)	.12
SQoL domains												
Total SQoL												
Family												
Finances												
Leisure activities	0.91	(0.88, 0.95)	.00									
Living situation				0.73	(0.63, 0.84)	.00						
Safety							0.95	(0.91, 0.99)	.02			
Social relations										0.89	(0.83, 0.95)	.00
Global item												
Total effect (c)	0.55 (SE = 0.28)			0.55 (SE = 0.28)			0.55 (SE = 0.28)			0.55 (SE = 0.28)		
Direct effect (c')	0.40 (SE = 0.30)			0.61 (SE = 0.29)			0.56 (SE = 0.29)			0.45 (SE = 0.29)		
Indirect effect (c-c')	0.15			-0.05			-0.01			0.10		
Evidence of mediation?	YES			NO			NO			YES		

	Model 9		
	aOR	95% CI	P
Race			
Minority	1.79	(1.05, 3.06)	.03
Age (years)			.83
25-45	1.35	(0.51, 3.57)	.55
≥45	1.35	(0.48, 3.80)	.57
High school education	1.08	(0.62, 1.90)	.78
Social support	1.27	(0.74, 2.17)	.36
Marital status			.29
Married/partnered	1.03	(0.38, 2.78)	.95
Separated/widowed/divorced	1.70	(0.87, 3.31)	.12
Current AOD	3.48	(1.93, 6.26)	.00
Parenting status	1.77	(1.00, 3.13)	.05
SQoL domains			
Total SQoL			
Family			
Finances			
Leisure activities			
Living situation			
Safety			
Social relations			
Global item	0.69	(0.59, 0.80)	.00
Total effect (c)	0.55 (SE = 0.28)		
Direct effect (c')	0.57 (SE = 0.29)		
Indirect effect (c-c')	-0.02		
Evidence of mediation?	NO		

Appendix B.

Summary of Interaction Effect of Parenting and Subjective Quality of Life

Variables	B	p-value	95% Confidence Interval	
			Lower Bound	Upper Bound
Parenting * Total SQoL	-0.00	.78	0.97	1.02
Parenting * Family	-0.02	.68	0.91	1.07
Parenting * Finances	0.00	.99	0.86	1.17
Parenting * Leisure activities	-0.00	.92	0.92	1.08
Parenting * Living situation	0.03	.84	0.77	1.38
Parenting * Safety	-0.01	.74	0.91	1.07
Parenting * Social relations	-0.10	.14	0.80	1.03
Parenting * Global	-0.22	.15	0.60	1.08
Models are adjusted for the confounding effects of age, race, education, social support, marital status and current alcohol or other drug dependence				