

**Rural-Urban Differences in the Life Satisfaction, Social Support, and Mental Health of
Postnatal Women in Ireland**

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Abstract

The postnatal period is often associated with an increased risk of poor psychological well-being. Rural and urban women face many different barriers during this period, yet there is little research examining the unique impact of these challenges. This study aimed to investigate rural-urban differences in the life satisfaction, social support, and mental health of postnatal women in Ireland. The current study employed a cross-sectional, between-groups design. It was hypothesized that (i) life satisfaction, (ii) social support, and (iii) mental health would be predicted by geographical location after controlling for possible confounding variables of age, socio-economic status (SES), and marital status. Eighty-nine mothers, from 15 counties in the Republic of Ireland participated in this study via an online questionnaire, which utilized validated scales to collect data on the predictor and criterion variables. Results of three hierarchical regression analyses found that there was no significant difference between rural and urban women's psychological well-being after controlling for confounding variables. Maternal age and SES were found to significantly predict psychological well-being. This has implications within policy and practice; services and interventions centred around increasing postnatal well-being should be aware of these risk factors and aim to focus resources on young mothers and/or mothers with low SES.

Table of Contents

Introduction.....	1
This Study	7
Methods.....	8
Participants.....	8
Measures.....	9
Design.....	11
Procedure.....	12
Ethics	14
Results.....	15
Descriptive statistics.....	15
Inferential statistics	16
Hypothesis 1	16
Hypothesis 2.....	18
Hypothesis 3.....	20
Summary	22
Discussion.....	23
References.....	30
Appendices.....	39
Appendix 1	39
Appendix 2	40
Appendix 3	40
Appendix 4.....	41
Appendix 5	42
Appendix 6.....	44
Appendix 7.....	45
Appendix 8.....	46
Appendix 9.....	47
Appendix 10.....	50
Appendix 11	52
Appendix 12.....	54

Introduction

The postnatal period encompasses a large range of positive and negative alterations for mothers. Most women will navigate this period in good health; however, adverse mental health challenges are widely acknowledged. Postnatal depression (PND) or post-partum depression is a non-psychotic mood disorder, recognized to be a multifaceted product of hormonal, environmental, genetic, and psychosocial factors (Philpott & Corcoran, 2018; Stewart & Vigod, 2019). PND is estimated to occur in 12% to 15% of women in Ireland, becoming a serious public health issue (Health Service Executive (HSE), 2022; Maxwell et al., 2018). A commonly reported symptom of PND is suicidal thoughts; in Ireland, suicide is the leading cause of mortality for mothers in their first postnatal year (O'Hare et al. 2021; Stewart & Vigod, 2019). PND has high comorbidity with anxiety disorders, stress disorders, and postpartum psychosis. The effect of maternal PND extends to family members, men are 2.5 times more likely to develop PND if their partner has been diagnosed and children of parents with PND have a higher risk of emotional and behavioural problems (Howard & Challacombe, 2018; Philpott & Corcoran, 2018; Ramchandani et al., 2008). Therefore, maternal mental health is a topic deserving of extensive research to help prevent any negative impacts.

Preventing Poor Postnatal Well-being

While past studies have been predominately focused on the treatment of PND and other postnatal mental health challenges, research is beginning to examine preventative factors (Stewart & Vigod, 2019). One of the most crucial pre-emptive factors for postnatal depression, anxiety, and stress disorders is ensuring that women maintain good psychological well-being through the perinatal period. Psychological well-being is used to describe an individual's overall emotional health and has been referred to as the foundation of mental health (World Health Organization, 2011). Some of the key factors contributing to a person's

psychological well-being are life satisfaction, levels of social support, and the presence or absence of mental health challenges (Huppert, 2009). It is also essential to identify factors that may negatively influence psychological well-being in order to improve current policies, enhance the effectiveness of preventative measures, and concentrate services on predominantly vulnerable groups.

Factors Known to Influence Psychological Well-being

Various environmental factors are known to contribute to psychological well-being, such as socio-economic status (SES), age, and marital status. Low SES is a cumulative and interactional risk factor, often accompanied by low education, poor living conditions, unemployment/lack of a stable job, and high levels of stress; each of these factors is thought to have a negative influence on psychological well-being (Wang et al., 2021). Being a single mother, being divorced, or being widowed are all risk factors for postnatal depression, anxiety, and high levels of stress (Mallikarjun & Oyeboode, 2005; Miller et al., 2006; Warner et al., 1996). Co-habiting and marriage are found to have equal effects on psychological well-being and decrease the likelihood of PND (Perelli-Harris et al., 2019). Maternal age was also found to be a prevalent risk factor (Hannon et al., 2023). Research has found that young mothers and mothers over 40 are at a higher risk of poor parental well-being (Ghaedrahmati et al., 2017). An under-researched factor is that of geographical location (e.g., rural versus urban living), particularly in an Irish context.

Risk Factors Associated with Rural Living

Geographical location is a potentially significant yet elapsed factor, this influence is under-researched within postnatal mental health despite multiple disparities between groups which may impact maternal well-being. Rural women face barriers when accessing services, with many parenting and community supports exclusively located in urban areas (Cawley, 2020). National statistics have also highlighted that rural dwellers experience further

proximity from healthcare services. Rural distances from essential services were found to be at least three times greater than urban differences, with maternity hospitals located the furthest away (Central Statistics Office (CSO), 2023). Rural mothers are more likely to experience problems at birth, partly due to such remoteness from services (Watson et al., 2021). Research has shown that birth problems and traumatic births are found to considerably increase the likelihood of PND and stress disorders such as PTSD (Radoš et al., 2020). The education of mothers in rural Ireland is lower than their urban equivalents and less educated mothers are more likely to encounter challenges when obtaining information about the pre- and postnatal period (CSO, 2019; Matsumura et al., 2019). This results in nulliparous rural mothers being less prepared for the changes a newborn brings, increasing the probability of poor well-being. Research consistently highlights the barriers that rural women face when acquiring access to postnatal services. However, little research has been conducted investigating the potential negative impact of these disparities on psychological well-being.

Risk Factors Associated with Urban Living

Urban women face many opposing challenges in the postnatal period, including higher levels of unemployment, poorer living conditions, pollution, and neighbourhood deprivation. Unemployment was found to be significantly higher in urban areas of Ireland, which may result in lesser living conditions (CSO, 2019). Mothers living in urban areas are more likely to be renting, the housing market in Ireland is known to be one of poor conditions for families with a lack of stability (Philpott & Corcoran, 2018). Compact conditions, levels of pollution, lack of outdoor space, and lack of green space in city living also contribute to poor well-being (Vanaken & Danckaerts, 2018; Zou et al., 2021). Urban dwellers are more likely to experience social class divisions, leaving those with low socio-economic status at an increased risk of experiencing neighbourhood deprivation (Fone et al., 2014). Carter et al. (2009) found that mothers who perceived high levels of neighbourhood deprivation were

seven times more likely to experience poor psychological well-being and face barriers to health-promoting behaviours. Although health-related services are less available in rural areas, rural dwellers tend to report better health. The CSO (2019) illustrated that people living in rural areas reported better health with 64% stating their health was very good compared to 55% of urban dwellers. Although these two groups of women live in the same country, they face very different challenges during the postnatal period. To the knowledge of the researcher, no studies have been conducted in Ireland looking at the influence of these challenges on postnatal women's psychological well-being. This research is crucial to lessen the likelihood of poor psychological well-being in mothers, in-turn decreasing their rates of adverse mental health problems.

Rural-Urban Differences in Life Satisfaction

Life satisfaction measures help to provide a general overview of subjective well-being, which is highly associated with an individual's total psychological well-being (Tov & Diener, 2013). Life satisfaction is a complex construct that may be influenced by many factors and these factors may differ by culture. Certain circumstances known to affect life satisfaction in Ireland are socio-economic status, employment, and living conditions (Philpott & Corcoran, 2018). Previous research has also shown that life satisfaction is affected by an individual's geographical location, finding that generally rural dwellers tend to score higher in life satisfaction in developed countries (Brereton, 2011; Sørensen, 2014; Sørensen 2021). Brereton et al. (2011) studied total well-being and life satisfaction in rural Ireland and noted that self-reported life satisfaction was significantly higher in rural dwellers when compared to urban residents. However, there is a dearth of evidence examining differences in life satisfaction between rural and urban postnatal women, as well as other vulnerable populations.

Rural-Urban Differences in Social Support

Social support is an extremely important contributor to psychological well-being within postnatal women, acting as a buffer for maternal mental health challenges (Huschke et al., 2020). Social support can be found in many forms, from family members to healthcare workers (Leahy-Warren et al., 2011). It is known to help to reduce stress, improve motivation, increase self-esteem, increase confidence, and relieve some of the physical symptoms of motherhood such as sleep deprivation (Leahy-Warren et al., 2011; Reid & Taylor, 2015). A good social support system is found to raise life satisfaction and promote healthy coping mechanisms (Cohen & McKay, 2020). Mothers with high levels of social support are exceedingly less likely to experience poor psychological well-being. Research has found that a lack of services is correlated to low levels of perceived social support (Barkin et al., 2020). Recent studies have begun to observe the impact of geographical location on levels of social support reported by postnatal women. Ginja et al. (2020) found that perinatal women residing in very rural areas of the UK reported significantly lower levels of social support. However more recently, Galbally et al. (2022) found that rural and urban women do not differ in levels of social support after controlling for the confounding variables of SES and marital status. Further research is required to investigate this relationship due to the significant effect of social support on psychological well-being. To further support this, a systematic review by Huschke et al. (2020) stresses the need for increased research on levels of social support within postnatal women in Ireland.

Rural-Urban Differences in Postnatal Mental Health

There is marginally more research available assessing the effects of rurality on the mental health of postnatal women. Two cross-sectional studies from the UK and the US investigated rural-urban differences in mental health (Ginja et al., 2020; Nidey et al., 2020). These studies found that rates of depression, anxiety, and stress were higher in postnatal

women from rural areas; Nidey et al.'s (2020) study reported rates of depression to be 21% higher than their urban counterparts before controlling for confounding variables. However, findings from both studies were not significant after controlling for maternal education, health insurance status, total SES, and levels of social support. Suggesting that socioeconomic factors may be driving the inequality between groups, increasing the overall risk of depression and anxiety. One longitudinal study was found examining geographical location and postnatal mental health (Galbally et al., 2022). This study found no difference in rates of depression and anxiety between geographical areas but found that rural women with depression reported significantly higher levels of stress and isolation compared to their urban counterparts. However, as this study involved low levels of diversity within the sample, one must be cautious about the generalisability of the results. Galbally et al. (2022), recommend that further research should be conducted on the relationship between mental health and rurality in different cultures and recommend research to include more linguistically diverse women and rural single mothers.

Low levels of life satisfaction, social support, and poor mental health have been linked to a significant decrease in the well-being of postnatal women and an increase in the risk of PND. Therefore, it is essential to consider any external factors, such as geographical location, which may adversely influence these aspects of psychological well-being. Although recent publications have begun to look at the effects of rurality, its influence on postnatal psychological well-being is far from understood. Studies appear to focus primarily on PND and neglect other important aspects of well-being such as levels of social support and life satisfaction (Stewart & Vigod, 2019). To truly support and understand factors impacting postnatal women's psychological health, research must look at a variety of factors rather than just the presence or absence of depression. Findings can help to better inform policy, treatment, and early intervention, particularly within at-risk groups.

This Study

This study aims to investigate the effects of geographical location on a model of postnatal psychological well-being within an Irish context. It is anticipated that this research will help to contribute to the current knowledge on the well-being of postnatal mothers in Ireland. This paper will conduct three analyses examining the research question: Does geographical location predict life satisfaction, social support, and mental health of postnatal women in Ireland? The following statements can be hypothesized based on the current literature. (i) Levels of life satisfaction will be predicted by rural/urban location after controlling for age, marital status, and SES. (ii) Levels of perceived social support will be predicted by rural/urban location after controlling for age, marital status, and SES. (iii) Levels of stress, anxiety, and depression will be predicted by rural/urban location after controlling for age, marital status, and SES.

Methods

Participants

The initial sample consisted of 90 participants; however, one response was omitted from the statistical analysis due to an insufficient area code. The final sample (N = 89) taken from a community sample, had a mean age of 34 (SD = 6.47) ranging from 18-45. All participants were currently residing in Ireland, 44.9 % (n = 40) of participants inhabited rural areas and 51.1% (n = 49) resided in urban areas. Participants were recruited from 15 counties in the Republic of Ireland (Mayo, Galway, Dublin, Meath, Wicklow, Kerry, Kilkenny, Kildare, Wexford, Laois, Louth, Cork, Donegal, Carlow, and Offaly). Participants were primarily Irish (n = 72), the remaining participants were Brazilian, Italian, English, Nigerian, Peruvian, American, French, Polish, and Welsh. A minimum sample size of 82 was required for this study. This number was calculated using Tabachnik and Fidell's (2013) sample size formula for regression analysis ($N = 50 + 8m$). In this case, $m = 4$ resulting in 82 participants. The majority of participants were from an upper middle or upper socio-economic class (n = 50). No participants were found to be in the lower class according to the Kuppuswamy SES scale cut-offs.

Participants were recruited using convenience sampling and snowball sampling. Participants learned about the study from social media, posters, or a service provider at the Early Learning Initiative (see Procedure). The survey link was also attached to the debriefing form and participants were encouraged to share the study with other women who met the inclusion criteria. Participants were eligible to take part if they were eighteen years of age or older and in their first postnatal year (had a baby in the past twelve months). Participants must have been able to provide informed consent in English as it was not feasible to translate the consent process into other languages (see Procedure section for full ethical considerations).

Measures

Demographics and covariates

The variables of age, SES, and marital status were assessed to consider their potential influence on the relationship between location and psychological well-being (Ghaedrahmati et al., 2017; Perelli-Harris et al., 2019; Mallikarjun & Oyebode, 2005; Miller et al., 2006; Wang et al., 2021). The variables of age, county, and nationality were also collected to describe the demographic characteristics of the sample. Marital status was measured using the CSO Level 1 classification plus the item co-habiting as used in similar studies (see Appendix 1). Area codes were used to derive the rural-urban classification as well as provide an understanding of participation across the country. The modified Kuppaswamy SES scale (Sharma, 2017), was used to gather the SES of the family (Appendix 2). The scale has been found to have good internal consistency with a Cronbach's Alpha of $a = .74$ (Sharma, 2017). The scale consists of three subscales (education, employment, and income). Subscale scores are added to compute the total score. Scores ranged between 3 and 29, participant scores can be categorized into validated cut-offs: Lower (between 0-4), Upper Lower (5-10), Lower Middle (11-15), Upper Middle (16-25), Upper (26-29). The Cronbach's alpha in this study was small ($a = .50$), this is likely due to the scale containing just three items. However, the inter-item correlation was observed to be within the optimal range of .2 - .4 as suggested by Briggs and Cheek (1986) for low-item scales.

Geographic area

Participants were required to provide the first three characters of their postcode to obtain the participant's area code and maintain anonymity. Geographical location was derived from these area codes by using the census small area boundaries data (CSO, 2011). Once the area of residence was found, this study used the CSO (2019) six-way rural/urban classification. This includes six classifications of geographical area in Ireland which can also

be further divided into urban (cities, satellite urban towns, independent urban towns) and rural (rural areas with strong urban influence, rural areas with moderate urban influence, highly rural areas).

Satisfaction With Life Scale (SWLS)

The Satisfaction with Life Scale (SWLS) was used to assess life satisfaction and subjective well-being. This scale measures the perceived discrepancy between one's life and one's ideal life (Diener et al., 1985). This study uses the full published scale that has been validated and reviewed (see Appendix 3). The scale is composed of five items and asks participants to indicate their agreement with each item on a 7-point Likert scale which ranges from 1 (strongly agree) to 7 (strongly disagree). Scores range between 5 and 35, items are combined to yield the participant's total score, the higher the score the greater the satisfaction with life. The scale has a mean score of 23.5 in the original study, with scores between 20 and 24 considered to be average (Pavot & Diener, 2008). The scale showed good internal reliability with Cronbach's alpha scores between .74 - .87 across various samples (Diener et al., 1985; Pavot & Diener, 2008). The scale has also shown good external validity, being translated, and validated in multiple countries worldwide (Pavot & Diener, 2008). In the current study, the scale showed good reliability with a Cronbach's alpha of $a = .88$.

The Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS is a popular self-report measure used to evaluate levels of social support in an individual's life (Zimet et al., 1988) (Appendix 4). The scale contained three subscales: significant other (Items 1, 2, 5, and 10), friends (Items 6, 7, 9, and 12) and family (Items 3, 4, 8, and 11). Participants are presented with statements such as "My friends really try to help me" and asked to indicate their agreement on a 7-point Likert scale which ranges from 1 "very strongly disagree" to 7 "very strongly agree". Answers are added together to create an overall score (ranging between 12-84) and a total subscale score (range 4-28) The original

study shows excellent internal consistency with alpha values of .85 in friends .87 in family and .91 in SO. Zimet et al. (1990) also found an alpha of .92 in a prenatal population. This scale has proven to have good re-test reliability and is psychometrically sound in studies using diverse populations (Zimet et al., 1988). In the current study the scale also showed good internal reliability with Cronbach's alpha values ranging from .81 - .84.

Depression Anxiety Stress Scale (DASS-21)

The DASS-21 is a concise 21-item version of the original 42-item scale used to obtain participants' overall mental health (Lovibond & Lovibond, 1995a). The instrument consists of three subscales (depression, anxiety, and stress) each containing seven items. The items are rated from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time) (see Appendix 5). The scale is scored by combining the total score for each subscale, then multiplying the total score by two to provide scores comparable to DASS-42. Participants for each subscale are categorized into validated cut offs (see Appendix 6 for these cut-offs) (Lovibond & Lovibond, 1995b). Many studies have highlighted the satisfactory psychometric properties of the condensed scale (Miller et al., 2006; Sariçam, 2018). The scale has shown good external validity and reliability across different populations with Cronbach's Alpha subscale scores ranging from .78 to .87 including a sample of postnatal women ($\alpha = .82$) (Clara et al., 2001; Lovibond & Lovibond, 1995a; Miller et al., 2006; Sariçam, 2018). In the current study the scale also indicated good internal reliability with a Cronbach's alpha varying from .86 - .88. This study will refer to the risk of depression/ anxiety as opposed to rates of depression/anxiety, as the DASS-21 scale was not intended to be diagnostic in this study.

Design

This quantitative study followed an observational, cross-sectional design. The research hypotheses were investigated using hierarchical multiple regression analyses. This

study used a between-participant design using the predictor variable (PV) of geographical location (rural vs. urban) this was entered at step 2 of the analyses. This study also employed possible confounding variables of age (PV), SES (PV), and marital status (PV); in order to control for these variables they were entered at step 1 of each analysis. The four predictor variables were used in each analysis to investigate their impact on the criterion variables (CV). Three hierarchical regression analyses were conducted on (i) the association between rurality and life satisfaction (CV) after controlling for age, SES, and marital status (ii) the association between rurality and mental health (CV) after controlling for age, SES, and marital status (iii) the association between rurality social support (CV) after controlling for age, SES, and marital status.

Procedure

This study used google forms; a survey administration platform to create an online survey that could be accessed by participants via a QR code or link. This study used social media posts (on Facebook, LinkedIn, and Instagram) and posters, (placed in creches, colleges/schools, libraries, and community centres) to assist in disseminating the survey (see Appendix 7). All posters and social media posts were equipped with a brief description of the study, inclusion criteria, information on the length of the questionnaire, and provided a link or QR code to access the online survey. The survey link was also attached to the debriefing form and participants were encouraged to share the study with other women who met the inclusion criteria. Participants were also recruited through service providers at the Early Learning Initiative, a service that facilitates parenting and early education programmes across Ireland (see Appendix 8 for written consent). Participants recruited through a service provider were also informed about the context of the study, the inclusion criteria, and information on the length of the questionnaire. They were also reminded of their ability to decline without

effect. Individuals who were interested in taking part in the study were then directed to the study via the survey link.

The link included a consent procedure before participants could advance to the questionnaire, in accordance with ethical guidelines (see Ethics section below). The information sheet contained all essential material on the current study, this research did not involve the use of deception. Participants were fully informed about the aims of the current study, the researcher, what their participation will involve, inclusion and exclusion criteria, their ability to decline participation, breaks/duration of the study, data protection and retention, risks and benefits, their anonymity, and what the results will be used for (see Appendix 9). The researcher and academic supervisor's contact details were displayed on the information sheet and participants were encouraged to voice any queries/concerns before participating. Participants had to tick a box stating that they had read and agreed with the terms of the study before they could advance to the consent sheet. The consent sheet repeated all important details on consent, displayed clearly in the form of bullet points (see Appendix 10). Once again, participants were asked to tick a box to declare that they approved the terms of the study and consent to participate before they could advance to the survey.

In section one of the questionnaire, participants were asked questions about their age, marital status, nationality, and area code in order to describe the demographic characteristics of the sample and the participant's marital status (see Appendix 1). Area codes (the first three characters in a postcode) were collected to divide the population into rural and urban (see Measures section). Participants then advanced to the Satisfaction with Life Scale (SWLS) and the Multidimensional Scale of Perceived Social Support (MSPSS) (Appendix 4 & 5). Participants saw a standard instruction for each questionnaire reading "Please indicate your agreement with each item by ticking a box from strongly agree to strongly disagree". The SWLW scale includes five items and the MSPSS is a 12-item questionnaire. Following this,

the participant progressed to the Kuppuswamy SES scale, where they were asked three questions in relation to their family's monthly income, education, and employment status (see Appendix 2). Lastly, participants completed the DASS-21. Participants were asked to "Indicate how much each statement applied to you over the past week". The statements are rated from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time) (see Appendix 5)(for scoring procedure please see Measures section). This mix of question responses helped to avoid acquiescence response bias in the current study.

When participants completed all four questionnaires they were thanked for their participation and presented with a debriefing sheet that reinforces them about why they took part in the current study, the research aims, their inability to withdraw consent and also provides the researcher and academic supervisor contact details (see Appendix 11). Although this study involved little risk, the debriefing sheet contained contact information for free services and helplines for the participant to avail of in the event of distress. In total participation in this study took approximately 5 to 10 minutes. After participation, all data collected was inputted into SPSS and used to run descriptives and check assumptions (see Appendix 12 for proof of data file and output). From here, three hierarchical regression analyses were ran to investigate the research hypotheses.

Ethics

This study was approved by the ethics committee at the National College of Ireland in November 2022. The participant consent procedures are in accordance with the Belmont Report, NCI ethical guidelines, the Irish Psychological Society Code of Ethics, and Procedures for Research involving Human Participants.

Results

Descriptive statistics

Table 1 provides descriptive statistics for the demographics of women living in urban and rural areas. This study consisted of 89 participants, 40 (44.9%) living in rural areas and 49 (55.1%) residing in urban areas.

Table 1

Comparative frequency data for SES and marital status

Variable	Rural		Urban	
	N	Valid %	N	Valid %
Marital Status				
Single	5	12.5	5	10.2
Co-habiting	9	22.5	10	20.4
Married	23	57.5	31	63.3
Divorced	1	2.5	2	4.1
Widowed	2	5	1	2

Variables were checked for the assumption of normality during the preliminary analysis. The variables of age, life satisfaction, social support, and total mental health were transformed using a log transformation, resulting in normally distributed results. Five outliers were identified; however, the scores were maintained in the analyses as they were within the range of potential scores and did not result in differentiation of results. Preliminary analyses were performed to check for outliers and ensure no violation of the assumptions of linearity, normality, and homoscedasticity. The data showed no violation of the assumptions on a normal P-Plot and Scatter graph. Table 2 presents the descriptive data for all continuous variables in the current study. For subscales descriptives see Appendix 6.

Table 2*Descriptives for continuous variables*

Variable	Mean (95% CI)	Std. Error Mean	Median	SD	Range
Age	34.00 [32.64-25.36]	.69	35	6.47	18-45
Socio-economic status	19.24 [17.97-20.52]	.65	19	6.11	7-29
Life satisfaction	24.37 [23.02-25.72]	.68	26	6.43	5-35
Social Support	65.48 [62.24-68.74]	1.63	68	15.39	12-84
Overall Mental Health	32.02 [26.45-37.60]	2.80	28	26.47	0-126

Inferential statistics

Three hierarchical multiple regression analyses were used to examine the effects of geographical location after controlling for SES, age, and marital status (block 1). To reduce the probability of Type 1 error this study used the Bonferroni correction (.05/3), therefore the p value was $p < .017$.

Hypothesis 1

To determine if geographical location (PV) added a predictive function to life satisfaction (CV) after controlling for the effects of age (PV), marital status (PV), and SES (PV), a hierarchical multiple regression was conducted. All tolerance and VIF values fell within acceptable bounds, according to tests for multicollinearity. Correlations between variables were investigated using Pearson's correlation coefficient in Table 3. SES ($r = .284$, $p = .007$) and being married ($r = .227$, $p = .016$) were significantly correlated with the criterion variable. Predictor variables' correlations were also evaluated; all intercorrelations between predictors were less than .9 indicating that multicollinearity was not violated, hence, the data was appropriate for a regression analysis.

Table 3*Correlation between all continuous variables*

Variable	1	2	3	4	5	6	7	8
1. Life satisfaction	1							
2. Age	.066	1						
3. Socio-economic Status	.284**	.278**	1					
4. Co-habiting	-.156	-.244**	-.174	1				
5. Divorced	-.163	.126	-.033	-.097	1			
6. Married	.227**	.415***	.208*	-.647***	-.232**	1		
7. Widowed	-.199	-.294*	-.027	-.097	-.035	-.232**	1	
8. Geographical Location	-.109	.010	.126	-.025	.044	.059	-.082	1

Note: N=89; * $p < .05$; ** $p < .01$ *** $p < .001$

The control variables of age, SES, and marital status were entered at block 1, explaining 14.2% of the variance in life satisfaction scores ($F(6, 81) = 2.24, p = .047$). However, this finding was not statistically significant given the modified p value. When geographical location was entered in block 2 the model explained a total variance of 16.7%, ($F(7, 80) = 2.29, p = .036$). Geographical location accounted for some variation in life satisfaction scores, however, this small variation was not significant. In the final model, socio-economic status was the only statistically significant predictor of life satisfaction with a beta value of .29 ($p = .010$) (see Table 4).

Table 4*Hierarchical multiple regression predicting life satisfaction.*

Variable	R^2	Adj R^2	B	SE	β	t	p
Block 1	.142	.079					
Age			-0.089	0.128	-.086	-0.699	.487
Socio-economic Status			0.286	0.117	.265	2.448	.017*
Co-habiting			-1.767	2.421	-.114	-0.730	.468
Divorced			-5.041	4.195	-.143	-1.202	.233
Married			0.890	2.253	.068	0.395	.694
Widowed			-4.841	4.131	-.137	-1.172	.245
Block 2	.167	.094					
Age			-0.104	0.127	-.100	-0.821	.414
Socio-economic Status			0.310	0.117	.287	2.649	.010*
Co-habiting			-1.675	2.402	-.108	-0.697	.488
Divorced			-4.581	4.171	-.130	-1.098	.275
Married			1.083	2.239	.083	0.484	.630
Widowed			-5.269	4.107	-.149	-1.283	.203
Geographical Location			-2.029	1.326	-.159	-1.530	.130

Note: R^2 = R-squared; Adj R^2 change = Adjusted R-squared; β = standardized beta value; B = unstandardized beta value; SE = Standard errors of B ; N = 89; Statistical significance: * p < .017

Hypothesis 2

To determine if geographical location (PV) added a predictive role to perceived social support (CV) after controlling for the effects of age, marital status, and SES, hierarchical multiple regression was performed. Preliminary analyses checked for and ensure no violation of linearity, normality, and homoscedasticity. All tolerance and VIF values fell within acceptable bounds, according to tests for multicollinearity. Correlations among variables were investigated using Pearson's correlation coefficient in Table 5. SES ($r = .263$, $p = .006$), and being married ($r = .200$, $p = .030$) were significantly correlated with the criterion variable. Intercorrelation between predictors varied from .01 to .65, revealing the assumption of multicollinearity was not violated hence, the data was suitable for regression analysis.

Table 5
Correlation between continuous variables

Variable	1	2	3	4	5	6	7	8
1. Social Support	1							
2. Age	.136	1						
3. Socio-economic Status	.263**	.278**	1					
4. Co-habiting	-.103	-.244**	-.174	1				
5. Divorced	-.096	.126	-.033	-.097	1			
6. Married	.200*	.415***	.208*	-.647***	-.232**	1		
7. Widowed	-.129	-.294*	-.027	-.097	-.035	-.232*	1	
8. Geographical Location	-.007	.010	.126	-.025	.044	.059	-.082	1

Note: N = 89; * $p < .05$; ** $p < .01$; *** $p < .001$

Age, SES, and marital status were entered at block 1, explaining 10.3% of variance in life satisfaction scores ($F(6, 81) = 1.56, p = .170$) however, this finding was not statistically significant. When geographical location was entered in block 2 the final model explained 10.3% variance ($F(7, 80) = 1.35, p = .237$) in social support scores however, no predictor met the significance level of .017. It was found that geographical location did not account for any meaningful variation in perceived social support.

Table 6*Hierarchical multiple regression predicting perceived social support.*

Variable	R^2	Adj R^2	B	SE	β	t	p
Block 1	.103	.037					
Age			0.012	0.302	.005	0.039	.969
Socio-economic Status			0.584	0.277	.233	2.108	.038
Co-habiting			-0.362	5.730	-.010	-0.063	.950
Divorced			-5.617	9.928	-.069	-0.566	.573
Married			3.135	5.333	.104	0.588	.558
Widowed			-8.193	9.778	-.100	-0.838	.405
Block 2	.106	.028					
Age			0.001	0.304	.000	0.003	.998
Socio-economic Status			0.601	0.281	.240	2.140	.035
Co-habiting			-0.296	5.760	-.008	-0.051	.959
Divorced			-5.287	10.002	-.065	-0.529	.599
Married			3.274	5.368	.109	0.610	.544
Widowed			-8.500	9.849	-.104	-0.863	.391
Geographical Location			-1.454	3.180	-.049	-0.457	.649

Note: R^2 = R-squared; Adj R^2 change = Adjusted R-squared; β = standardized beta value; B = unstandardized beta value; SE = Standard errors of B ; N = 89

Hypothesis 3

To determine if geographical location (PV) added a predictive function to mental health scores (CV) after controlling for the effects of age, marital status, and SES, a hierarchical multiple regression was conducted. Preliminary analyses were performed to check for the assumptions of linearity, normality, and homoscedasticity. Predictor variables correlations were investigated using Pearson's correlation coefficient in Table 7. Age ($r = -.331$, $p = .001$), being married ($r = -.242$, $p = .012$), and co-habiting with a partner ($r = .247$, $p = .010$) were significantly correlated with the criterion variable. The intercorrelation between predictors were found to be in an acceptable range (.01 to .65). These findings show that the

assumption of multicollinearity was not violated hence, the data was appropriate for regression analysis.

Table 7

Correlation between continuous variables

Variable	1	2	3	4	5	6	7	8
1. Mental Health	1							
2. Age	-.331**	1						
3. Socio-economic Status	-.143	.278**	1					
4. Co-habiting	.227**	-.244**	-.174	1				
5. Divorced	-.021	.126	-.033	-.097	1			
6. Married	-.242**	.415***	.208*	-.647***	-.232**	1		
7. Widowed	-.071	-.294**	-.027	-.097	-.035	-.232**	1	
8. Geographical Location	.060	.010	.126	-.025	.044	.059	-.082	1

Note: N = 89; * $p < .05$; ** $p < .01$; *** $p < .001$

Age, SES, and marital status were entered at block 1, explaining 16.5% of the variance in life satisfaction scores ($F(6, 80) = 2.64, p = .022$), this finding was not statistically significant. When geographical location was entered in block 2 the model explained 16.9% variance in scores ($F(7, 79) = 2.29, p = .035$). Therefore, geographical location alone did not account for a significant increase in mental health scores, the only statistically significant predictor of mental health was age with a beta value of $-.32 (p = .011)$ (see Table 4).

Table 8*Hierarchical multiple regression predicting perceived mental health.*

Variable	R^2	Adj R^2	B	SE	β	t	p
Block 1	.1165	.103					
Age			-1.305	0.500	-.318	-2.608	.011*
Socio-economic Status			-0.109	0.459	-.026	-0.237	.813
Co-habiting			5.762	9.496	.094	0.607	.546
Divorced			0.270	16.453	.002	0.016	.987
Married			-4.328	8.839	-.084	-0.490	.626
Widowed			-24.459	16.205	-.176	-1.509	.135
Block 2	.132	.056					
Age			-1.282	0.504	-.313	-2.544	.013*
Socio-economic Status			-0.145	0.465	-.034	-0.313	.755
Co-habiting			5.621	9.539	.092	0.589	.557
Divorced			-0.433	16.564	-.003	-0.026	.979
Married			-4.623	8.890	-.090	-0.520	.605
Widowed			-23.806	16.309	-.171	-1.460	.148
Geographical Location			3.097	5.266	.061	0.588	.558

Note: R^2 = R-squared; Adj R^2 change = Adjusted R-squared; β = standardized beta value; B = unstandardized beta value; SE = Standard errors of B ; N = 89; Statistical significance: * p < .017

Summary

In hypothesis one SES was found to have a significant effect on life satisfaction. It was also found that mental health had a statistically significant relationship with age. Overall, results showed that geographical location did not significantly predict any variance in life satisfaction, social support, or mental health in postnatal women after controlling for age, SES, and marital status. Therefore, the study failed to reject the null hypotheses.

Discussion

The current study examined rural-urban differences in postnatal psychological well-being, within an Irish context. The central aim of this research was to investigate the influence of geographical location on (i) life satisfaction, (ii) social support, and (iii) mental health of postnatal women. Although many variables may contribute to poor postnatal well-being, this study chose to control for age, SES, and marital status as previous research has proven such variables to have a significant influence (Ghaedrahmati et al., 2017; Perelli-Harris et al., 2019; Mallikarjun & Oyeboode, 2005; Miller et al., 2006; Wang et al., 2021). Based on previous research it was hypothesized that (i) levels of life satisfaction would be predicted by geographical location after controlling for age, marital status, and SES; (ii) levels of perceived social support would be predicted by geographical location after controlling for age, marital status, and SES and (iii) mental health will be predicted by geographical location after controlling for age, marital status, and SES. Three hierarchical regression analyses were administered to investigate the hypotheses. Results found that geographical location did not predict any variation in levels of (i) life satisfaction, (ii) social support and (iii) mental health. The hypotheses in this study were not supported by the data, therefore the present study failed to reject all null hypotheses.

The first analysis observed rural-urban differences in the life satisfaction of postnatal women. To the knowledge of the researcher, this study was the first to investigate this topic. This analysis concluded that neither geographical location, age nor marital status impacted life satisfaction. However, SES was found to have a significant influence on this sample. Indicating that those who have a higher SES (based on education, unemployment, and income) are more likely to have higher life satisfaction. This is likely due to the financial cost of having a child, mothers with higher SES tend to be better prepared, have access to more services and experience less of a financial strain (Matsumura et al., 2019; Wang et al., 2020). Low SES has also been correlated to subordinate living conditions and neighbourhood

deprivation, which may in-turn lower life satisfaction (Fone et al., 2014; Zou et al., 2021).

These findings are congruent with previous studies highlighting the influence of SES on life satisfaction (Daraei & Mohajery, 2012; House & Williams, 2000). In contrast with past research age, and marital status did not have a substantial impact on the current population's life satisfaction (Ghaedrahmati et al., 2017). These results disagree with the findings that married mothers report higher subjective well-being than their single counterparts (Perelli-Harris et al., 2019; Peiró, 2006). However, research in the past decade has shown that this disparity between single and married mothers is becoming smaller and less prevalent, which may explain why marital status was not significant (Girme et al., 2022; Ifcher & Zarghamee, 2013; Pollmann-Schult, 2017). Marital status within this sample was broadly reflective of the Irish population, 60% of the sample were married, 22% were co-habiting, 11% were single, and less than 7% of participants were divorced or widowed (CSO, 2020).

The second analysis found no difference between rural and urban women in terms of social support, therefore accepting the null hypothesis. These findings support the conclusion made by Galbally et al. (2022) that rural-urban women do not differ in levels of social support, after controlling for confounding variables of age, marital status, and SES. Results differ from Ginja et al., (2020) who found that women living in remote rural areas were at risk of lower social support after controlling for confounding variables. However, this study used three subdivisions of rural and urban classifications, the current sample size constrained the feasibility of a sub-analysis to investigate this finding in an Irish context. Separating rural and urban into subcategories may help to provide a more comprehensive overview. Future studies should consider using sub-analysis when observing social support differences in rural and urban postnatal women. This analysis did not find SES to be correlated to changes in perceived social support, separate from other studies (Wei et al., 2018). Geckova (2003) stated the relationship between low SES and low social support is more common in men as

opposed to women, this could explain why these variables were not correlated in this study. There was also no significant difference in levels of social support between marital status and the age of mothers. These findings help to expand the current literature on levels of social support perceived by postnatal women in Ireland; Huschke et al. (2020) suggested that this is an area lacking investigation although it is crucial in prompting good psychological well-being. However, this analysis may have missed some important aspects of the construct of social support such as support within a community. Future studies should provide a more comprehensive understanding of different kinds of social support outside of family, friends, and partners.

In the third analysis, rural and urban women's overall mental health was investigated. Geographical location did not account for any variance in overall mental health. Similar to previous research this study used the DASS-21 cut-offs of moderate to extremely severe risk when inferring to the risk of depression, anxiety, and stress (Hannon et al., 2022). Once again, results on this scale were used as a screening tool to identify at-risk mothers, not a diagnostic tool. The number of women at a moderate to severe risk of depression was lower than the national average of 12 to 15% (10% of urban compared to 8% of rural women) (HSE, 2022; Maxwell et al., 2018). Eight percent of rural and urban women reported moderate to severe symptoms of anxiety, this number was comparable to similar studies in an Irish context which found rates between 9 to 10%, however, this is lower than the estimated global average of 15% found in a large-scale meta-analysis (Dennis et al., 2017; Falah-Hassani et al., 2017; Hannon et al., 2023). Stress levels for rural and urban women were 10%, this was found to be much lower than previous research that found stress levels of around 20% for postnatal women (Hannon et al., 2023). Possible reasoning for lower reported results in the present study may be due to sampling error or the DASS-21 being a self-report measure; participants may have engaged in possible self-censoring due to the stigma of

parental mental health. Another possible explanation is self-selection bias, as women not struggling with mental health problems may have been more likely to take part in the current study. Non-response bias may also explain lower reported results, mental health challenges may be a vulnerable topic for some mothers, leading to their voluntary withdrawal from the study. Overall, the findings of all three analyses found that geographical location does not pose a significant risk to postnatal women's life satisfaction, social support, or overall mental health within this sample.

The control variables of age, SES, and marital status accounted for 12% of the variance in mental health scores, with age being the only statistically significant predictor. This finding conflicted with past research stating that SES was driving a relationship between geographical location and postpartum mental health issues (Ginja et al., 2020; Nidey et al., 2020). These findings do however support the findings of Galbally et al.'s (2022) longitudinal study that suggests no rural, or urban differences exist in levels of depression, anxiety, and stress in postnatal women. Although age did not account for any variation in life satisfaction or social support age was considered to have a significant negative impact on overall mental health. Inferring that the younger a mother is, the higher the risk for symptoms of depression, anxiety, and stress. One possible explanation may be the fact that younger women are more likely to be new mothers. This may cause them to be ill-prepared for a newborn which is known to increase the risk of depression, anxiety, and stress (Maimburg & Væth, 2015). Previous research has also found similar outcomes with the lowest rates of PND seen in mothers aged 31-35, and the highest rates amongst mothers in their teens/early twenties (Ghaedrahmati et al., 2017).

Strengths and Limitations

A strength of the current study is the sample, this study had an excellent age range varying from 18-45. Although the sample size is relatively small (N = 89) (limiting the power

of the analyses), this study was able to recruit women from 15 counties in the Republic of Ireland. Galbally (2022), recommended that future research conducted on the relationship between mental health and rurality in different cultures include more linguistically diverse women and single rural women. A large proportion of the participants were Irish, and one in five participants were of other nationalities such as Brazilian, Italian, English, Nigerian, Peruvian, American, French, Polish, and Welsh. This sample helped to give an accurate representation of mothers currently residing in Ireland. The sample also compared well to the profile of the region in terms of marital status as discussed above. The current sample helped to lessen the possibility of selection bias. Although, due to the cross-sectional nature of this study it is impossible to make inferences on causality, as a temporal sequence between variables cannot be established with certainty. Future studies should focus on a longitudinal controlled design to examine this relationship further.

An important limitation is that this study did not represent any women from a lower SES, this limits the generalisability of results to those with lower SES and should be considered when interpreting findings. It may have also been of interest to control for the possible confounding variable of months postpartum. Mothers are at a higher risk of experiencing spikes in levels of depression and anxiety due to hormonal decreases post-birth (Boath & Henshaw, 2008). This is known as ‘baby blues’ which may last up to two weeks after giving birth. To get a more accurate description of mental health, this variable should be included in future analyses. Postnatal psychological well-being is a complex construct with many different factors, some of which may not be included in the current study. Further examination is required to establish the effect of geographical location on other areas correlating to postnatal well-being such as physical health and low self-esteem. Given the scope of the current study, this research was focused on postnatal women. However, research suggests that fathers also experience poor psychological well-being during the postpartum

period (Philpott & Corcoran, 2018). Future studies should consider examining the distinct rural-urban differences in paternal psychological well-being.

Implications

Factors surrounding poor postnatal well-being cannot truly be understood without research into all possible influences. This study helped to broaden the literature surrounding rural-urban differences in postnatal psychological well-being. These findings can be used to better inform services and interventions on the prevalent risk factors for poor life satisfaction, social support, and mental health of postnatal women. Based on the results of this study it is recommended that services focus on increasing preventative resources for young mothers in Ireland as well as for mothers who have a low socio-economic status. Geographical location does not seem to be a significant risk factor alone; however, it may be advantageous for policies to concentrate resources in areas where mothers are likely to experience low SES and where young maternal age is common. As findings suggest that neither rural nor urban women are at a higher risk of poor postnatal well-being due to location, healthcare services, interventions, and parenting services should ensure that their resources are accessible to women throughout the country and not just focused in large urban areas. Appropriate location of postnatal services can help to decrease barriers for women attempting to access these services and improve preventative measures for all mothers. Early identification of poor postnatal well-being drastically decreases the likelihood of later developing mental health problems such as postnatal anxiety or PND (Philpott & Corcoran, 2018). Early diagnosis is not only crucial for the mother, but also for their newborn child, partner, and family (Huschke et al., 2020; Philpott & Corcoran, 2018).

Conclusion

This study aimed to observe rural-urban differences in a model of psychological well-being within postnatal women in an Irish context. This study found that geographical location

alone did not influence changes in life satisfaction, mental health, or social support after controlling for SES, age, and marital status. However, it was found that age had a significant negative effect on the risk of mental health issues and SES had a positive effect on life satisfaction. This has implications within policy and practice; health services and interventions centred around increasing postnatal well-being, should focus resources on young mothers and/or mothers with low SES. Postnatal well-being is a complex construct with many factors shaping it, future studies should continue to research factors that may influence postnatal women's well-being.

References

- Barkin, J. L., Osborne, L. M., Buoli, M., Bridges, C. C., Callands, T. A., & Ezeamama, A. E. (2020). Training frontline providers in the detection and management of perinatal mood and anxiety disorders. *Journal of Women's Health, 29*(7), 889–890.
<https://doi.org/10.1089/jwh.2019.8287>
- Boath, E., & Henshaw, C. (2008). Women's health: Postnatal depression. *British Journal of Healthcare Assistants, 2*(3), 127–131. <https://doi.org/10.12968/bjha.2008.2.3.28847>
- Brereton, F., Bullock, C., Clinch, J. P., & Scott, M. (2011). Rural change and individual well-being. *European Urban and Regional Studies, 18*(2), 203–227.
<https://doi.org/10.1177/0969776411399346>
- Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality, 54*(1), 106–148.
<https://doi.org/10.1111/j.1467-6494.1986.tb00391.x>
- Carter, S., Williams, M., Paterson, J., & Iusitini, L. (2009). Do perceptions of neighbourhood problems contribute to maternal health? Findings from the Pacific Islands Families study. *Health & Place, 15*(2), 622–630.
<https://doi.org/10.1016/j.healthplace.2008.10.005>
- Cawley, M., (2020) European economic policies and Ireland. In Carter, R. W., & Parker, A. J. (Eds.), *Ireland: Contemporary perspectives on a land and its people* (pp. 9-22). Routledge.
- Central Statistics Office (CSO). (2011) *Census 2011 small area population statistics (SAPS)*.
<https://www.cso.ie/en/census/census2011smallareapopulationstatisticssaps/>
- Central Statistics Office (CSO). (2019). *Urban and rural life in Ireland*.
<https://www.cso.ie/en/releasesandpublications/ep/p-uri/urbanandrurallifeinireland2019/introduction/>

Central Statistics Office (CSO). (2020). *LFS households and family units*.

<https://www.cso.ie/en/releasesandpublications/er/lfshfu/lfshouseholdsandfamilyunitsq22020/>

Central Statistics Office (CSO). (2023) *Measuring distance to everyday services in Ireland*.

<https://www.cso.ie/en/releasesandpublications/ep/p-mdsi/measuringdistancetoeverydayservicesinireland/generalresults/>

Clara, I. P., Cox, B. J., & Enns, M. W. (2001). Confirmatory factor analysis of the depression–anxiety–stress scales in depressed and anxious patients. *Journal of Psychopathology and Behavioral Assessment*, 23(1), 61–67.

<https://doi.org/10.1023/a:1011095624717>

Cohen, S., & McKay, G., (2020) Social support, stress and the buffering hypothesis: A theoretical analysis. In Taylor, S. E., Singer, J. E., & Baum, A. (Eds.). *Handbook of psychology and health. Volume IV* (pp.249-265). Routledge.

Daraei, M., & Mohajery, A. (2012). The impact of socioeconomic status on life satisfaction. *Social Indicators Research*, 112(1), 69–81. [https://doi.org/10.1007/s11205-012-0040-](https://doi.org/10.1007/s11205-012-0040-x)

x

Dennis, C.-L., Falah-Hassani, K., & Shiri, R. (2017). Prevalence of antenatal and postnatal anxiety: Systematic review and meta-analysis. *British Journal of Psychiatry*, 210(5), 315–323. <https://doi.org/10.1192/bjp.bp.116.187179>

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49(1), 71–75.

https://doi.org/10.1207/s15327752jpa4901_13

Falah-Hassani, K., Shiri, R., & Dennis, C.-L. (2017). The prevalence of antenatal and postnatal co-morbid anxiety and depression: a meta-analysis. *Psychological Medicine*, 47(12), 2041–2053. <https://doi.org/10.1017/s0033291717000617>

- Fone, D., White, J., Farewell, D., Kelly, M., John, G., Lloyd, K., Williams, G., & Dunstan, F. (2014). Effect of neighbourhood deprivation and social cohesion on mental health inequality: A multilevel population-based longitudinal study. *Psychological Medicine*, 44(11), 2449–2460. <https://doi.org/10.1017/s0033291713003255>
- Galbally, M., Watson, S. J., Coleman, M., Worley, P., Verrier, L., Padmanabhan, V., & Lewis, A. J. (2022). Rurality as a predictor of perinatal mental health and well-being in an Australian cohort. *Australian Journal of Rural Health*, 1-14. <https://doi.org/10.1111/ajr.12934>
- Geckova, A. (2003). Influence of social support on health among gender and socio-economic groups of adolescents. *The European Journal of Public Health*, 13(1), 44–50. <https://doi.org/10.1093/eurpub/13.1.44>
- Ghaedrahmati, M., Kazemi, A., Kheirabadi, G., Ebrahimi, A., & Bahrami, M. (2017). Postpartum depression risk factors: A narrative review. *Journal of Education and Health Promotion*, 6, 1-7. https://doi.org/10.4103/jehp.jehp_9_16
- Ginja, S., Jackson, K., Newham, J. J., Henderson, E. J., Smart, D., & Lingam, R. (2020). Rural-urban differences in the mental health of perinatal women: A UK-based cross-sectional study. *BMC Pregnancy and Childbirth*, 20(1), 1-11. <https://doi.org/10.1186/s12884-020-03132-2>
- Girme, Y. U., Park, Y., & MacDonald, G. (2022). Coping or thriving? Reviewing intrapersonal, interpersonal, and societal factors associated with well-being in singlehood from a within-group perspective. *Perspectives on Psychological Science*, 1-24. <https://doi.org/10.1177/17456916221136119>
- Hannon, S., Gartland, D., Higgins, A., Brown, S. J., Carroll, M., Begley, C., & Daly, D. (2022). Maternal mental health in the first year postpartum in a large Irish population

cohort: The MAMMI study. *Archives of Women's Mental Health*, 25(3), 641–653.

<https://doi.org/10.1007/s00737-022-01231-x>

Hannon, S., Gartland, D., Higgins, A., Brown, S. J., Carroll, M., Begley, C., & Daly, D.

(2023). Physical health and comorbid anxiety and depression across the first year postpartum in Ireland (MAMMI study): A longitudinal population-based study.

Journal of Affective Disorders, 328(1), 228–237.

<https://doi.org/10.1016/j.jad.2023.02.056>

Howard, L. M., & Challacombe, F. (2018). Effective treatment of postnatal depression is associated with normal child development. *The Lancet Psychiatry*, 5(2), 95–97.

[https://doi.org/10.1016/s2215-0366\(18\)30008-7](https://doi.org/10.1016/s2215-0366(18)30008-7)

Health Service Executive (HSE). (2022). *Signs and symptoms: Postnatal depression*.

<https://www2.hse.ie/conditions/postnatal-depression/>

House, J., & Williams, D. R. (2000). Understanding and reducing socioeconomic and

racial/ethnic disparities in health. In Smedley, B. D., & S. Leonard Syme. (Eds.).

Promoting health: Intervention strategies from social and behavioral research (pp.

81-124). Washington, D.C. National Academy Press.

Huppert, F. A. (2009). Psychological well-being: Evidence regarding its causes and

consequences. *Applied Psychology: Health and Well-Being*, 1(2), 137–164.

<https://doi.org/10.1111/j.1758-0854.2009.01008.x>

Huschke, S., Murphy-Tighe, S., & Barry, M. (2020). Perinatal mental health in Ireland: A

scoping review. *Midwifery*, 89(1), 1-21. <https://doi.org/10.1016/j.midw.2020.102763>

Ifcher, J., & Zarghamee, H. (2013). The happiness of single mothers: Evidence from the general social survey. *Journal of Happiness Studies*, 15(5), 1219–1238.

<https://doi.org/10.1007/s10902-013-9472-5>

- Leahy-Warren, P., McCarthy, G., & Corcoran, P. (2011). First-time mothers: Social support, maternal parental self-efficacy and postnatal depression. *Journal of Clinical Nursing*, 21(3-4), 388–397. <https://doi.org/10.1111/j.1365-2702.2011.03701.x>
- Lovibond, P. F., & Lovibond, S. H. (1995a). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335–343. [https://doi.org/10.1016/0005-7967\(94\)00075-u](https://doi.org/10.1016/0005-7967(94)00075-u)
- Lovibond, S. H., & Lovibond, P. F. (1995b). *Manual for the depression anxiety stress scales* (2nd ed.). Psychology Foundation of Australia.
- Maimburg, R. D., & Væth, M. (2015). Postpartum depression among first-time mothers – results from a parallel randomised trial. *Sexual & Reproductive Healthcare*, 6(2), 95–100. <https://doi.org/10.1016/j.srhc.2015.01.003>
- Mallikarjun, P. K., & Oyeboode, F. (2005). Prevention of postnatal depression. *Journal of the Royal Society for the Promotion of Health*, 125(5), 221–226. <https://doi.org/10.1177/146642400512500514>
- Matsumura, K., Hamazaki, K., Tsuchida, A., Kasamatsu, H., & Inadera, H. (2019). Education level and risk of postpartum depression: results from the Japan environment and children’s Study (JECS). *BMC Psychiatry*, 19(1), 1-11. <https://doi.org/10.1186/s12888-019-2401-3>
- Maxwell, D., Robinson, S. R., & Rogers, K. (2018). “I keep it to myself”: A qualitative meta-interpretive synthesis of experiences of postpartum depression among marginalised women. *Health & Social Care in the Community*, 27(3), 23–36. <https://doi.org/10.1111/hsc.12645>

- Miller, R. L., Pallant, J. F., & Negri, L. M. (2006). Anxiety and stress in the postpartum: Is there more to postnatal distress than depression? *BMC Psychiatry*, 6(1), 1-11.
<https://doi.org/10.1186/1471-244x-6-12>
- Nidey, N., Tabb, K. M., Carter, K. D., Bao, W., Strathearn, L., Rohlman, D. S., Wehby, G., & Ryckman, K. (2020). Rurality and risk of perinatal depression among women in the United States. *The Journal of Rural Health*, 36(1), 9-16.
<https://doi.org/10.1111/jrh.12401>
- O'Hare M. F., Manning, E., Corcoran, P., & Greene, R. A. (2021) *MDE Ireland: Data brief No. 5. November 2021*.
https://www.ucc.ie/en/media/research/maternaldeathenquiryireland/NPEC_MDEDataBriefNo5_Nov2021.pdf
- Pavot, W., & Diener, E. (2008). The Satisfaction with Life Scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology*, 3(2), 137–152.
<https://doi.org/10.1080/17439760701756946>
- Peiró, A. (2006). Happiness, satisfaction and socio-economic conditions: Some international evidence. *The Journal of Socio-Economics*, 35(2), 348–365.
<https://doi.org/10.1016/j.socec.2005.11.042>
- Perelli-Harris, B., Hoherz, S., Lappegård, T., & Evans, A. (2019). Mind the “happiness” gap: The relationship between cohabitation, marriage, and subjective well-being in the United Kingdom, Australia, Germany, and Norway. *Demography*, 56(4), 1219–1246.
<https://doi.org/10.1007/s13524-019-00792-4>
- Philpott, L. F., & Corcoran, P. (2018). Paternal postnatal depression in Ireland: Prevalence and associated factors. *Midwifery*, 56(1), 121–127.
<https://doi.org/10.1016/j.midw.2017.10.009>

- Pollmann-Schult, M. (2017). Single motherhood and life satisfaction in comparative perspective: Do institutional and cultural contexts explain the life satisfaction penalty for single mothers? *Journal of Family Issues*, 39(7), 2061–2084.
<https://doi.org/10.1177/0192513x17741178>
- Ramchandani, P. G., Stein, A., O'Connor, T. G., Heron, J., Murray, L., & Evans, J. (2008). Depression in men in the postnatal period and later child psychopathology: A population cohort study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 47(4), 390–398. <https://doi.org/10.1097/chi.0b013e31816429c2>
- Radoš, S., Matijaš, M., Kuhar, L., Anđelinović, M., & Ayers, S. (2020). Measuring and conceptualizing PTSD following childbirth: Validation of the city birth trauma scale. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(2), 147-155.
<https://doi.org/10.1037/tra0000501>
- Reid, K. M., & Taylor, M. G. (2015). Social support, stress, and maternal postpartum depression: A comparison of supportive relationships. *Social Science Research*, 54(1), 246–262. <https://doi.org/10.1016/j.ssresearch.2015.08.009>
- Sarıçam, H. (2018). The psychometric properties of Turkish version of depression anxiety stress scale-21 (DASS-21) in community and clinical samples. *Journal of Cognitive-Behavioral Psychotherapy and Research*, 7(1), 19-30.
<https://doi.org/10.5455/jcbpr.274847>
- Sharma, R. (2017). Revised Kuppaswamy's socioeconomic status scale: Explained and updated. *Indian Pediatrics*, 54(10), 867–870.
<https://pubmed.ncbi.nlm.nih.gov/29120335/>
- Sørensen, J. F. L. (2021). The rural happiness paradox in developed countries. *Social Science Research*, 98(1), 1-17. <https://doi.org/10.1016/j.ssresearch.2021.102581>

- Sørensen, J. F. L. (2014). Rural–urban differences in life satisfaction: Evidence from the European Union. *Regional Studies*, 48(9), 1-18.
<https://doi.org/10.1080/00343404.2012.753142>
- Stewart, D. E., & Vigod, S. N. (2019). Postpartum depression: Pathophysiology, treatment, and emerging therapeutics. *Annual Review of Medicine*, 70(1), 183–196.
<https://doi.org/10.1146/annurev-med-041217-011106>
- Tabachnick, B., & Fidell, L. (2013). *Using multivariate statistics*. (7th ed.).
<https://www.pearsonhighered.com/assets/preface/0/1/3/4/0134790545.pdf>
- Tov, W., & Diener, E. (2013). Subjective wellbeing. *The Encyclopedia of Cross-Cultural Psychology*, 1239–1245. <https://doi.org/10.1002/9781118339893.wbeccp518>
- Vanaken, G.-J., & Danckaerts, M. (2018). Impact of green space exposure on children’s and adolescents’ mental health: A systematic review. *International Journal of Environmental Research and Public Health*, 15(12), 1-17.
<https://doi.org/10.3390/ijerph15122668>
- Wang, D., Li, Y.-L., Qiu, D., & Xiao, S.-Y. (2021). Factors influencing paternal postpartum depression: A systematic review and meta-analysis. *Journal of Affective Disorders*, 293(1), 51–63. <https://doi.org/10.1016/j.jad.2021.05.088>
- Warner, R., Appleby, L., Whitton, A., & Faragher, B. (1996). Demographic and obstetric risk factors for postnatal psychiatric morbidity. *The British Journal of Psychiatry*, 168(5), 607–611. <https://doi.org/10.1192/bjp.168.5.607>
- Watson, K., White, C., Hall, H., & Hewitt, A. (2021). Women’s experiences of birth trauma: A scoping review. *Women and Birth*, 34(5), 417-424.
<https://doi.org/10.1016/j.wombi.2020.09.016>
- Wei, D.-M., Au Yeung, S. L., He, J.-R., Xiao, W.-Q., Lu, J.-H., Tu, S., Chen, N.-N., Lam, K. B. H., Cheng, K.-K., Leung, G. M., Xia, H.-M., Schooling, C. M., & Qiu, X. (2018).

The role of social support in family socio-economic disparities in depressive symptoms during early pregnancy: Evidence from a Chinese birth cohort. *Journal of Affective Disorders*, 238(1), 418–423. <https://doi.org/10.1016/j.jad.2018.06.014>

World Health Organization, Department of Mental Health (2011) *Mental health: A state of well-being*.

https://www.euro.who.int/__data/assets/pdf_file/0004/404851/MNH_FactSheet_ENG.pdf

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2

Zimet, G., Powell, S., Farley, G., Werkman, S., & Berkoff, K. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of Personality Assessment*, 55(3), 610–617. https://doi.org/10.1207/s15327752jpa5503&4_17

Zou, M.-L., Jiang, C.-B., Chen, Y.-H., Wu, C.-D., Candice Lung, S.-C., Chien, L.-C., Kallawicha, K., Yang, Y.-T., Lo, Y.-C., & Chao, H. J. (2021). Effects of air pollution, land-use type, and maternal mental health on child development in the first two years of life in the Greater Taipei area. *Environmental Research*, 197(1). <https://doi.org/10.1016/j.envres.2021.111168>

Appendices

Appendix 1

Demographics and self-reported measures questionnaire

This appendix includes the training programme questionnaire that was administered to the participants to gather the demographic data used in this study. The variables of nationality and county/area code will be maintained from this questionnaire and used to give the characteristic of the population from this study. Self-reported questions will also be included on this page, these questions will collect covariates data to control for variables such as age, marital status, and area (rural vs urban).

Figure 1: Demographics and self-reported measures questionnaire

<i>Demographics and self-reported measures questionnaire</i>				
<i>Urban-Rural Differences in the Life Satisfaction, Social Support, and Mental Health of Postnatal Women?</i>				
1. What is your age?				
<input style="width: 100%; height: 30px;" type="text"/>				
2. What is your marital status?				
Single	Co-habiting	Married	Widowed	Divorced
3. What is your nationality?				
<input style="width: 100%; height: 30px;" type="text"/>				
4. What area code (e.g. D1, D6, F26, R35, P72) do you live in? Please do not enter your full postcode, just the first 3 characters.				
<input style="width: 100%; height: 30px;" type="text"/>				

Appendix 2

The Kuppuswamy SES scale

Below (figure 1) is an example of the Kuppuswamy scale that participants completed. This is the full published scale that has been validated and reviewed. Participants clicked on the option that best suits the status of the household that they live in. The scale begins with a brief introduction stating, “Please select the option that best relates to the head of your household in terms of education, occupation and income”.

Figure 1: Kuppuswamy administered to participants.

Education of head of family	Score
Profession or honours	7
Graduate or postgraduate	6
Intermediate or post high school diploma	5
High school certificate	4
Middle school certificate	3
Primary school certificate	2
Literate	1
Occupation of head of family	
Profession	10
Semi- profession	6
Clerical, Shop-owner	5
Skilled owner	4
Semi-skilled worker	3
Unskilled worker	2
Unemployed	1
Monthly income of family (2017)	
>41430	12
20715-41429	10
15536-20714	6
10357-15535	4
6214-10356	3
2092-6213	2
<2091	1

Appendix 3

Satisfaction With Life Scale (SWLS)

Below (figure 1) is an example of the Satisfaction with Life Scale that participants in this study completed. This is the full published scale that has been validated and reviewed.

Participants rated each item on each scale using the 5-point Likert scale which ranges from 1 (strongly agree) to 5 (strongly disagree). The SWLW has a total of 5 items.

Figure 1: SWLS questionnaire administered to participants

Satisfaction with Life Scale (SWLS)

Instructions

Below are five statements that you may agree or disagree with. Indicate your agreement with each item by tapping the appropriate box, from strongly agree, to strongly disagree. Please be open and honest in your responding.

		Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
1.	In most ways my life is close to my ideal.	1	2	3	4	5	6	7
2.	The conditions of my life are excellent.	1	2	3	4	5	6	7
3.	I am satisfied with my life.	1	2	3	4	5	6	7
4.	So far I have gotten the important things I want in life.	1	2	3	4	5	6	7
5.	If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

Appendix 4

Multidimensional Scale of Perceived Social Support (MSPSS)

Below (figure 1) is an example of the *MSPSS* that participants in this study have completed. This is the full published scale that has been validated and reviewed. Participants rated each item on each scale using the 7-point Likert scale which ranges from 1 (strongly agree) to 7 (strongly disagree). The *MSPSS* has 12 items in total, consisting of three subscales, Significant other (four items), Family (four items) and Friends (four items)

Figure 1: MSPSS questionnaire administered to participants

Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

- Circle the “1” if you **Very Strongly Disagree**
- Circle the “2” if you **Strongly Disagree**
- Circle the “3” if you **Mildly Disagree**
- Circle the “4” if you are **Neutral**
- Circle the “5” if you **Mildly Agree**
- Circle the “6” if you **Strongly Agree**
- Circle the “7” if you **Very Strongly Agree**

1.	There is a special person who is around when I am in need.	1	2	3	4	5	6	7
2.	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
3.	My family really tries to help me.	1	2	3	4	5	6	7
4.	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7
5.	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7
6.	My friends really try to help me.	1	2	3	4	5	6	7
7.	I can count on my friends when things go wrong.	1	2	3	4	5	6	7
8.	I can talk about my problems with my family.	1	2	3	4	5	6	7
9.	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
10.	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7
11.	My family is willing to help me make decisions.	1	2	3	4	5	6	7
12.	I can talk about my problems with my friends.	1	2	3	4	5	6	7

Appendix 5

The Depression Anxiety Stress Scale (DASS)

Below (figure 1) is an example of the DASS-21 scale that participants in this study have completed. This is the full published scale that has been validated and reviewed.

Participants rated their response on a scale from 0 (did not apply to me at all) to 3 (Applied to me most of the time) based on how much that statement applied to them in the last week.

Figure 1: DASS-21 questions administered to participants

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.				
The rating scale is as follows:				
	0	1	2	3
0	Did not apply to me at all			
1	Applied to me to some degree, or some of the time			
2	Applied to me to a considerable degree, or a good part of time			
3	Applied to me very much, or most of the time			
1.	I found it hard to wind down	0	1	2 3
2.	I was aware of dryness of my mouth	0	1	2 3
3.	I couldn't seem to experience any positive feeling at all	0	1	2 3
4.	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2 3
5.	I found it difficult to work up the initiative to do things	0	1	2 3
6.	I tended to overreact to situations	0	1	2 3
7.	I experienced trembling (e.g., in the hands)	0	1	2 3
8.	I felt that I was using a lot of nervous energy	0	1	2 3
9.	I was worried about situations in which I might panic and make a fool of myself	0	1	2 3
10.	I felt that I had nothing to look forward to	0	1	2 3
11.	I found myself getting agitated	0	1	2 3
12.	I found it difficult to relax	0	1	2 3
13.	I felt down-hearted and blue	0	1	2 3
14.	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2 3
15.	I felt I was close to panic	0	1	2 3
16.	I was unable to become enthusiastic about anything	0	1	2 3
17.	I felt I wasn't worth much as a person	0	1	2 3
18.	I felt that I was rather touchy	0	1	2 3
19.	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2 3
20.	I felt scared without any good reason	0	1	2 3
21.	I felt that life was meaningless	0	1	2 3

Appendix 6***Comparative means of the DASS-21 subscales***

Below (figure 1) showed the subscales of the DASS-21 scale, these subscales are divided by rural and urban women's scores.

Figure 1: comparative means of DASS-21 subscales

Variable	Urban		Rural	
	N	Valid %	N	Valid %
Total Depression				
Normal 0-9	34	85	42	85.7
Mild 10-13	3	7.5	2	4.1
Moderate 14-20	3	7.5	3	6.1
Severe 21-27	0	0	2	4.1
Extremely severe 28+	0	0	0	0
Total Anxiety				
Normal 0-7	34	87.5	42	85.7
Mild 8-9	3	7.5	3	6.1
Moderate 10-14	3	7.5	3	6.1
Severe 12-19	0	0	1	2.0
Extremely severe 20+	0	0	0	0
Total Stress				
Normal 0-14	32	87.5	40	81.6
Mild 15-19	4	10	4	8.2
Moderate 19-25	4	10	5	10
Severe 26-33	0	0	0	0
Extremely severe 34+	0	0	0	0

Appendix 7
Poster

This appendix contains the poster that will be used to recruit participants in the current study. This sheet contains a brief explanation of the inclusion criteria in the study as well as a QR code and a link to the information sheet.

Figure 1: Poster

RESEARCH PARTICIPANTS NEEDED

ARE YOU A NEW MOTHER IN YOUR FIRST POSTNATAL YEAR?

Participants needed for a psychology research study looking at new mothers (over 18 years of age) in rural and urban Ireland

60%

If you are interested in contributing to new psychological research scan the QR code below with your phone. Or follow the link below!

THIS QR CODE INCLUDES ALL THE RELEVANT INFORMATION YOU NEED ABOUT YOUR PARTICIPATION AND HOW YOUR ANSWERS WILL HELP US.

LOOKING FOR ANY FURTHER INFORMATION CONTACT THE RESEARCH BY EMAIL

Appendix 8

Letter of Agreement

Below (figure 1) contains the letter of agreement granted by the director of the Early Learning Initiative (ELI). This agreement allowed the ELI staff to disseminate information on participation to their service users.

Figure 1: Letter of Agreement obtained from The Early Learning Initiative



Letter of Agreement

Name: Josephine Bleach

Date: 24-11-2022

Organisation: Early Learning Initiative, National College of Ireland

Your Position: Director

I, Josephine Bleach, agree to disseminate information about Brona Mulligan's research project titled "Rural-Urban Differences in Life satisfaction, Social Support and Mental Health of Postnatal Women in Ireland" to relevant contacts associated with my organization. I will share the information about the study as provided to me by the researcher (Brona Mulligan, undergraduate psychology student at National College of Ireland). I understand that participants are not under any obligation to complete the questionnaire.

Briefly indicate how you are going to distribute the information provided by the researcher.

Allow Bronagh to send an email with the information and questionnaire to my team, who will then distribute it to their list of contacts with the proviso that participants are under no obligation to complete the questionnaire.

Signed:

Date: 24-11-2022

Please feel free to contact the researcher Brona Mulligan @x20381976@student.ncirl.ie or the research supervisor Dr Caoimhe Hannigan (caimhe.hannigan@ncirl.ie) if you would like any further information.

Appendix 9
Information sheet

This appendix contains the participant's information leaflet (Figure 1). This leaflet will be distributed to all participants in this study and outlines all information in relation to the context of the study, participant criteria, participants' involvement, consent, possible risks and benefits and data protection.

Figure 1: Participant Information Leaflet

Participant Information Leaflet

Urban-Rural Differences in the Life Satisfaction, Social Support and Mental Health of Postnatal Women?

You are being invited to take part in a research study. Please take the time to fully read this document before choosing whether to take part in this study. The following information contains a detailed description as to why the research is being done and what it would involve for you. If you have any questions about the information provided, please do not hesitate to contact me using the details at the end of this sheet.

About the current study

I am currently in my final year of the BA psychology programme at the National College of Ireland. As a part of our coursework, we are required to carry out an independent research project. The research question I have researched and chosen is, "Does geographical location predict life satisfaction, social support, and mental health of postnatal women in Ireland?". The overall aim of this study is to investigate any differences between rural and urban mothers in Ireland. This research hopes to gather a large sample of mothers living in Ireland and investigate your general experiences and well-being. This project will be supervised by Dr Caoimhe Hannigan, who is a researcher and lecturer at the National College of Ireland.

What will taking part in the study involve?

As a participant in this study, you will be asked to complete an online questionnaire, which will consist of topics related to life satisfaction, socioeconomic status, depression, anxiety, stress, marital status, and social support. You will also be asked to provide your age, nationality, and county/area so we can look at the characteristic of the population. The consent process will roughly take ten minutes, the questionnaire process will take approximately 5 minutes. This current study will not involve any focus groups or interview processes. You can take a break from the questionnaire at any point, you also have the right to leave the questionnaire. Any information entered before pressing submit will be automatically deleted once you leave the questionnaire page.

Who can take part in the current study?

The study will involve two groups of participants, group 1 who are individuals living in Urban areas including Cities, city-dependent towns etc., and group 2 who live in rural areas in Ireland with little to no urban influence. To participate in the current study, you must fall under the definition of a mother living in Ireland who is in their first year after the birth of a child (also known as the postnatal period). Participants included in this research must be over 18 years of age.

Do I have to take part?

You do not have to take part in this study and refusing to take part will not cause any effect. If you do decide to take part, also note that you are permitted to skip any questions that make you feel discomfort. You are also permitted to take breaks when completing the current study if you wish.

All information in this study is anonymous therefore after participants press submit on the Depression Anxiety Stress (DASS) questionnaire it will not be possible to withdraw any data as individual responses cannot be identified. You must read both this sheet and the consent form and then tick the consent boxes at the end of each sheet to participate and give consent to this research.

Possible risks and benefits associated with the study

This questionnaire includes items asking about life satisfaction, mental health, social support, marital status and socioeconomic status. There is a small risk that these questions may cause some participants to feel upset or distressed. If you think that this question may cause you distress, you should not participate in this study. After being informed of the context of the study if you feel any

distress for any reason please avail of the helplines and services mentioned in the debriefing sheet.

If you experience any minor upset in the process of completing this study, you are free to take a break from the questionnaire or to discontinue participation and exit the questionnaire. There are no direct benefits to your taking part in this research however the information you provide will contribute to developing the information known about postpartum women in Ireland.

Will taking part be confidential and what will happen to my data?

This questionnaire is completely anonymous, it is not possible to recognize a participant from their responses in the questionnaires. All the data gathered from the questionnaires will be treated in the firmest confidence. Only the researcher and their academic supervisor listed below will have access to the questionnaire responses collected. Data collected from this study will be stored in a password-protected file, only the researcher and the supervisor will be able to access this data. Data will be retained for five years in accordance with the NCI data retention policy. You can choose whether you would like to allow your data to be used in secondary data analysis by the National College of Ireland in the following consent form. This means your de-identifiable data would be placed into a secure system within the National College of Ireland and may be used in further analysis and research.

What will happen to the results of the study?

The results of this study will be presented in my final year dissertation which will be submitted to the National College of Ireland. As part of my final year dissertation, we will report the findings in an academic-style research report and will also be required to present the research in an oral presentation. The results of this study may also be submitted to academic journals or presented at conferences. If you wish you may contact the researcher for a summary of the findings of the proposed study, this summary will be issued to you via email after the study has been completed and graded by the exam board.

Whom should you contact for any further information?

Contact details

Researcher: Brona Mulligan

Final year student, BA psychology

National College of Ireland

Email Address: X20381976@student.ncirl.ie

Academic Supervisor:

Dr Caoimhe Hannigan

Researcher and Lecturer

National College of Ireland

Email Address: Caoimhe.Hannigan@staff.ncirl.ie

I have read and agree to the above statements

Appendix 10

Consent form

Figure 1 provides the consent form that will be administered to participants to obtain their consent for the proposed study.

Figure 1: showing participant consent form

<p style="text-align: center;">Participant Consent Form</p> <p style="text-align: center;"><i>Urban-Rural Differences in the Life Satisfaction, Social Support and Mental Health of Postnatal Women</i></p> <p>To consent to take part in the current research...</p> <ul style="list-style-type: none">○ I voluntarily agree to participate in this research study.○ I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.○ I am over the age of eighteen.○ I am an individual that is in the first year of the postpartum period

- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that participation involves completing a questionnaire about life satisfaction, socio-economic status, social support, marital status, and mental health.
- I understand that I will not benefit directly from participating in this research.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that in any report on the results of this research, my identity will remain anonymous.
- I understand that records of consent and study data will be retained in a secure password-protected server until the exam board confirms the results of the dissertation.
- I understand that I can take a break or withdraw from the study at any point before submission.
- I understand that due to the anonymity of the questionnaire, I am not entitled to withdraw my answers after I submit the questionnaire.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.
- I consent to my data being used in the secondary analysis by the National College of Ireland
- I have read all the above statements
- I consent to all the terms listed above

Contact details

Researcher: Brona Mulligan

Final year student, BA psychology

National College of Ireland

Email Address: X20381976@student.ncirl.ie

Academic supervisor: Dr Caoimhe Hannigan

Researcher and Lecturer,

National College of Ireland

Email Address: Caoimhe.Hannigan@staff.ncirl.ie

Appendix 11
Debriefing Sheet

This appendix contains the debriefing sheet that will be given to participants after they have finished the proposed study. This sheet thanks the participant and contains information on the aims of the study, data protection and retention, the sample in this study, what will happen with the results and will also provide participants with relevant helplines. The link to participate in this study is also given to participants so they can share this study with other mothers in their first postpartum year if they are interested.

Figure 1: Participant debriefing sheet

<p style="text-align: center;">Participant Debriefing Sheet</p> <p style="text-align: center;"><i>Urban-Rural Differences in the Life Satisfaction, Social Support and Mental Health of Postnatal Women?</i></p> <p>Thank you for agreeing to participate in this study! We recommend that you save a copy of this sheet to refer to.</p> <p>The primary aim of this research is to observe any rural-urban differences in life satisfaction, social support, and mental health of postnatal women In Ireland. This study aims to also take into consideration other factors that influence life satisfaction, mental health issues and social supports such as socio-economic status (SES), age and marital status. If you know of a mother currently in their first postpartum year who may be interested in taking part, you are permitted to send them the questionnaire link https://questionnaire/122</p> <p>The research you participated in</p> <p>The research objective was to learn more about any rural-urban differences in the life satisfaction, social support and mental health of postnatal women in Ireland. The current study also attends to take into account contributing factors that may affect both life satisfaction and mental health of post-natal women. These factors include age, marital status, and SES. This study aims to produce the findings concisely to extend the previous knowledge on postnatal care in Ireland.</p>
--

The sample

We invited mothers who were over the age of 18 to take part in this study. The current research split these participants into two groups, one group of rural women and a second group of urban. In this study, you were asked to describe your demographic information such as age, county and nationality. We also collected information about your socio-economic status, life satisfaction, social support and mental health as a mother living in Ireland. There are no direct benefits from taking part in this research however the information you provided will contribute to developing the information known about postpartum mothers in Ireland.

What will happen with the results?

The results you provided in this study will help us to investigate any rural-urban differences between life satisfaction, social support and mental health. I hope to use the information provided in my final year dissertation, conferences, and scientific journals. The information collected by the survey is completely anonymous, it is not possible to recognise a participant from their responses in the questionnaires. Therefore, you will not be able to withdraw your response as described in the information sheet and consent form. All the data gathered from the questionnaires will be treated in the firmest confidence. Only the researcher and their academic supervisor will have access to the questionnaire responses collected. Data collected from this study will be stored in a password-protected file, only the researcher and the supervisor will be able to access this data. Data will be retained for five years in accordance with the NCI data retention policy.

Relevant helplines/services

Listed below is the information for relevant services. If you feel distressed for any reason after completing the current study, please avail of the free helplines and services mentioned below. If you feel especially concerned about any topic introduced in the questionnaire or have any further questions, please feel free to contact the researcher or supervisor using the contact information provided below.

Thank you for your time.

Parentline Tel: 01 873 3500 or 1890 927 277 www.parentline.ie

Postnatal Depression Ireland support meeting and coffee mornings -www.pnd.ie/new_contact

Post-Natal Depression Ireland helpline- Tel: 021-492-2083

Contact details

Researcher: Brona Mulligan

Final year student, BA psychology

National College of Ireland

Email Address: X20381976@student.ncirl.ie

Academic supervisor: Dr Caoimhe Hannigan

Researcher and Lecturer,

National College of Ireland

Email Address: Caoimhe.Hannigan@staff.ncirl.ie

Appendix 12
Proof of SPSS data

This appendix contains proof of the SPSS data file (figure 1) and output (figure 2) used to run analyses in the current study.

Figure 1: SPSS data file

The screenshot shows the SPSS Data View window with 19 rows of data and 16 visible columns. The columns are labeled as follows: SWLS_lif_e_close_t_o_ideal, SWLS_lif_e_excellen_t, SWLS_lif_e_satisfac_tion, SWLS_i_mportant_things, SWLS_lif_e_over_ch_ange_not, Total_SWLS, MSPSS_speical_p_erson_ne, MSPSS_speical_p_erson_joy, MSPSS_f_amily_hel_ps, MSPSS_s_ource_c_omfort, MSPSS_f_iends_he_lp, MSPSS_c_ount_on_friends, MSPSS_t_alk_probl_ems_fami, and MSPSS_s_hare_sor_ows_frien. The data values range from 1.00 to 7.00 for most variables, and 19.00 to 33.00 for Total_SWLS.

	SWLS_lif_e_close_t_o_ideal	SWLS_lif_e_excellen_t	SWLS_lif_e_satisfac_tion	SWLS_i_mportant_things	SWLS_lif_e_over_ch_ange_not	Total_SWLS	MSPSS_speical_p_erson_ne	MSPSS_speical_p_erson_joy	MSPSS_f_amily_hel_ps	MSPSS_s_ource_c_omfort	MSPSS_f_iends_he_lp	MSPSS_c_ount_on_friends	MSPSS_t_alk_probl_ems_fami	MSPSS_s_hare_sor_ows_frien
1	6.00	6.00	6.00	6.00	6.00	30.00	5.00	6.00	5.00	5.00	5.00	5.00	5.00	5.00
2	3.00	6.00	5.00	5.00	5.00	24.00	5.00	5.00	4.00	6.00	5.00	5.00	6.00	7.00
3	3.00	3.00	6.00	6.00	1.00	19.00	2.00	7.00	5.00	2.00	7.00	6.00	6.00	1.00
4	6.00	5.00	6.00	5.00	2.00	24.00	6.00	5.00	6.00	2.00	5.00	2.00	2.00	6.00
5	5.00	5.00	5.00	5.00	2.00	22.00	5.00	5.00	5.00	5.00	5.00	5.00	6.00	6.00
6	5.00	5.00	5.00	5.00	6.00	26.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
7	7.00	5.00	7.00	7.00	7.00	33.00	5.00	7.00	7.00	7.00	7.00	6.00	5.00	7.00
8	7.00	5.00	7.00	7.00	7.00	33.00	7.00	7.00	7.00	7.00	7.00	5.00	5.00	7.00
9	5.00	5.00	5.00	5.00	3.00	23.00	7.00	5.00	7.00	7.00	5.00	7.00	7.00	7.00
10	3.00	6.00	6.00	6.00	5.00	26.00	7.00	7.00	7.00	7.00	7.00	5.00	5.00	7.00
11	5.00	5.00	5.00	6.00	6.00	27.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
12	5.00	5.00	5.00	5.00	4.00	24.00	7.00	7.00	7.00	5.00	7.00	5.00	5.00	4.00
13	7.00	7.00	7.00	7.00	7.00	35.00	7.00	7.00	7.00	5.00	7.00	6.00	6.00	6.00
14	6.00	5.00	6.00	5.00	5.00	27.00	5.00	6.00	6.00	6.00	5.00	4.00	2.00	4.00
15	5.00	5.00	5.00	5.00	5.00	25.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
16	3.00	3.00	6.00	6.00	2.00	20.00	6.00	7.00	5.00	4.00	3.00	5.00	5.00	1.00
17	3.00	4.00	6.00	5.00	2.00	20.00	7.00	7.00	7.00	7.00	7.00	5.00	5.00	7.00
18	6.00	6.00	6.00	6.00	6.00	30.00	5.00	5.00	7.00	5.00	5.00	6.00	6.00	6.00
19	6.00	6.00	5.00	5.00	6.00	28.00	6.00	6.00	5.00	2.00	6.00	4.00	4.00	3.00

Figure 2: Proof of SPSS output

