

## Central Lancashire Online Knowledge (CLoK)

Title	Loneliness in Pregnancy and Parenthood: Impacts, Outcomes, and Costs
Type	Article
URL	<a href="https://clock.uclan.ac.uk/51177/">https://clock.uclan.ac.uk/51177/</a>
DOI	##doi##
Date	2024
Citation	Nowland, Rebecca orcid iconORCID: 0000-0003-4326-2425, Charles, Joanna and Thomson, Gill orcid iconORCID: 0000-0003-3392-8182 (2024) Loneliness in Pregnancy and Parenthood: Impacts, Outcomes, and Costs. The Yale Journal of Biology and Medicine, 97 (1). pp. 93-98. ISSN 0044-0086
Creators	Nowland, Rebecca, Charles, Joanna and Thomson, Gill

It is advisable to refer to the publisher's version if you intend to cite from the work. ##doi##

For information about Research at UCLan please go to <http://www.uclan.ac.uk/research/>

All outputs in CLoK are protected by Intellectual Property Rights law, including Copyright law. Copyright, IPR and Moral Rights for the works on this site are retained by the individual authors and/or other copyright owners. Terms and conditions for use of this material are defined in the <http://clock.uclan.ac.uk/policies/>

# Loneliness in Pregnancy and Parenthood: Impacts, Outcomes, and Costs

Rebecca Nowland<sup>a,\*</sup>, Joanna Charles<sup>b</sup>, and Gill Thomson<sup>a</sup>

<sup>a</sup>School of Nursing and Midwifery, University of Central Lancashire, Preston, UK; <sup>b</sup>Health and Social Services Group, Welsh Government, Cardiff, Wales, UK

**Background:** Becoming a parent has been highlighted as a period associated with increased risks for loneliness, with around one-third of parents reporting feeling lonely often or always. However, as most understanding of loneliness is based on elderly or student cohorts, further insights into the costs of parental loneliness is needed. **Method:** We conducted a literature review of impacts of loneliness in pregnancy and parenthood and present a synthesis of the health, social, societal, and economic costs. We draw on evidence about impacts and costs of loneliness in other cohorts to help provide a wider context to understand the impacts and costs and how parental loneliness differs from other populations. **Results:** Similar to literature with elderly cohorts, parental loneliness has impacts on health and wellbeing, such as depression in new parents and increased general practitioner (GP) visits in pregnancy. But also has intergenerational impacts via its association with poor mental health and social competence and increased respiratory tract infections in the child. Physical health impacts widely associated with loneliness in other cohorts have yet to be examined in parents. Loneliness in parents is likely to result in social withdrawal further isolating parents and wider societal and economic costs relating to absence from employment and informal caring roles. **Conclusion:** Parental loneliness has the potential for negative and pervasive impacts. As parental loneliness has wide ranging and intergenerational impacts it is important that a multi-sectoral perspective is used when examining its costs.

## BACKGROUND

Loneliness is typically defined as an unpleasant and adverse mood state experienced when there is a discrepancy between a person's actual and desired social connections [1]. Loneliness can be caused by a lack of quality or quantity of social connections and can be experienced with or without social isolation [2]. Despite being a universal phenomenon that most people experience, loneliness can also be severe and chronic. Over recent years there have been initiatives designed to reduce loneliness

due to its well-established links with poor physical and mental health [3], including increased likelihood of early mortality [4]. Loneliness is now recognized as a global health issue [5], with the World Health Organization (WHO) declaring it as a global concern, launching an international Commission on Social Connection (2004-2005). Since 2018, the UK has had a government agenda established to specifically reduce loneliness [6], with other countries such as Switzerland, Germany, and Japan likely to follow suit.

One area where loneliness is particularly important

\*To whom all correspondence should be addressed: Dr. Rebecca Nowland, University of Central Lancashire, School of Nursing and Midwifery, Preston, UK; Email: rnowland@uclan.ac.uk; ORCID: 0000-0003-4326-2425.

Abbreviations: GP, general practitioner.

Keywords: loneliness, parental, maternal, parents, mental health, physical health, economic costs

concerns pregnancy and in new and expectant parents. In 2017, Action for Children [7] surveyed over 2000 parents in the UK and found that one-third reported feeling lonely often or always. Longitudinal research finds similar percentages (around 30%) of parents experiencing loneliness which remains stable over a number of years, indicating that for some parents loneliness is a chronic problem [8]. To date, most loneliness research has focused on elderly and student populations. Currently, there is a lack of understanding of why and how parents experience loneliness, which parents are most likely to be impacted, and what are the implications of parental loneliness for parents, infants, families, and society.

In this mini-review we highlight the importance of widening our understanding of the impacts of loneliness. We review extant literature on parental loneliness, and wider research with other cohorts and highlight the health, social, societal, and economic costs. We argue that there are multiple impacts of being lonely in pregnancy and parenthood affecting the parent, offspring, and the wider community. To fully understand parental loneliness, it will be important to address gaps and limitations in the existing evidence and we outline these gaps in this mini-review.

We conducted a review of existing literature examining impacts of loneliness in pregnancy and parenthood combining it with existing literature in other cohorts to contextualize our findings and highlight differences. While there are two scoping reviews in this specific area [9,10], this methodology only enables an examination of literature specific to the review focus. In contrast, this mini-review uses narrative review methodology enabling incorporation of wider literature and comparison between findings in parents and other cohorts in more detail. We also explore potential mechanisms of transgenerational impact and use theoretical models of loneliness to propose social impacts.

We present a summary of the main evidence for health, social, societal, and economic costs of loneliness experienced during pregnancy and parenthood. This is followed by a discussion of the key impacts and costs of parental loneliness, potential interventions, and several important gaps and limitations where further research is needed.

## HEALTH COSTS

Despite there being well-established links between poor physical health and loneliness in different cohorts [3], the relationship between physical health and loneliness has not been examined in parents. The available literature on parental loneliness has focused on mental well-being, demonstrating similar associations with depression to other cohorts. Cross-sectional studies have

shown that loneliness is higher or more frequent in mothers with depression [9,10]. Longitudinal studies have shown that depression is higher in mothers and fathers experiencing loneliness, and that these effects persist over time [11]. Antenatal loneliness is also predictive of postnatal depression [12], indicating that there may be reciprocal relationships between loneliness and depression in new parents. These insights reflect those found within other populations. For example, loneliness and depression in older adults and children have been shown to have reciprocal effects: loneliness is associated with increases in depression over time and depression is associated with increases in loneliness over time [13,14]. Thus, it is possible that loneliness in parenthood has reciprocal relationships with depression, however, this is yet to be evidenced.

Further, loneliness in other cohorts has also been linked to high health risk behaviors, such as smoking and drinking [15], low fruit and vegetable intake, and poorer diet quality [16]. But there is research to indicate that for some parents being pregnant, may be an opportunity for positive change in relation to health behavior [17,18]. Recent evidence indicates that the latter may be correct as loneliness in pregnancy is associated with increased healthcare visits indicating that although loneliness is associated with poorer mental health outcomes, during pregnancy women may be more likely to access healthcare support to address those concerns. A review of loneliness and social isolation produced for the Welsh Government found a small, but significant, association between loneliness and increased General Practitioner (GP) visits [19]. The review also found single and new parents to be at particular risk of experiencing loneliness and social isolation and who had a higher incidence of accessing their GP for support and referrals to mental health services. This was due to reasons including post-natal depression, sleepless nights, stress, mental frustration, and distress. A further study [20] found higher numbers of unscheduled hospital visits in lonely pregnant mothers than non-lonely mothers. This increase in unscheduled hospital visits may be the result of the physical impacts of loneliness on these women. But another possible explanation is that these women who are lonely are looking for social support in the hospital or do not have the physical care or support to help them make decisions or feel comfortable at home.

## INTERGENERATIONAL COSTS

A critical impact of parental loneliness is its transgenerational effects. Parental loneliness has been linked to poorer child health outcomes. In one study loneliness in pregnancy was associated with increased numbers of offspring respiratory tract infections, antibiotic use, and

physician visits [21]. Possible mechanisms behind the effect of maternal loneliness on offspring respiratory infections are unknown, but some possible mechanisms have been suggested [21]. First, there may be a direct impact of maternal loneliness on the health of the offspring via abnormal fetal development of the hypothalamic-pituitary-adrenal (HPA) axis resulting in long term impacts on immune system functioning impacting disease susceptibility [22,23]. Second, loneliness in pregnancy and early parenthood may impact healthcare seeking behavior, given that prenatal loneliness is associated with increased GP visits [19] and unscheduled hospital visits [20]. Third, maternal loneliness may influence nutrition in pregnancy as loneliness in other cohorts has been shown to impact diet quality and eating behaviors [16] influencing the maternal gut microbiota which has been implicated in the development of the infants immune system [24].

In addition, studies have reported concurrent associations between parent and child loneliness [25], particularly between the mother and their children [26]. Although a recent study has shown a gendered effect: father's loneliness was predictive of their son's persistent loneliness and mother's loneliness predictive of their daughters [27]. There are several proposed mechanisms for intergenerational transmission of loneliness. First, the genetic contribution of loneliness has been highlighted [28,29], although others [26] suggest this propensity can be moderated by high and positive levels of maternal support. There is also a wealth of evidence to indicate that social or cognitive processes may be involved in the intergenerational transmission of loneliness. These processes include lonely parents not offering relationship advice/support to their children [30], having low levels of interpersonal trust [31], and failing to teach them important social skills [25]. In one study parental loneliness has been linked to low parenting self-efficacy, which in turn is linked to poor social skills and loneliness in the child [32], indicating that parenting self-efficacy may influence the transmission of loneliness from parent to child.

Parental loneliness has also been linked to children's developmental outcomes. Mothers' loneliness has also been associated with their child's poorer problem-solving skills [33], poor social competence, hostility and fear of negative evaluation [34], and social anxiety (in girls only [35]). Both mothers' and fathers' loneliness are associated with poorer peer evaluated cooperating skills in girls [25].

## SOCIAL COSTS

In contrast to the evidence for intergenerational costs there is less available evidence for wider social costs of parental loneliness. Here we discuss the direct social costs relating to the psychosocial impacts on the parent

and their immediate social networks, distinguished from the discussion in the next section that examines wider societal costs. Research in other cohorts has shown that loneliness is associated with withdrawal from social networks. The loneliness model proposed by Hawkey and Cacioppo [3] highlights that loneliness can lead to a hypervigilance to social threat, whether real or imagined. Social threat bias is a common phenomenon in lonely individuals. It concerns expectations of the social world being more threatening, which in turn can elicit a bias towards perceiving behaviors as threatening or negative in others and leads lonely people to avoid social engagement leading to further exacerbate their feelings of loneliness and isolation. Although this is yet to be investigated, parental loneliness is also likely to be associated with restricted socialization and stimulation opportunities for their infants because of parental withdrawal from social interactions. Isolated parents may also lack important social resources impacting their capacity to provide nurturing care to their child.

## SOCIETAL AND ECONOMIC COSTS

Parental loneliness is also likely to have wider costs to society such as productivity losses from work absences and unemployment due to ill-health (physical and mental) and difficulties re-engaging with a previous role following disengagement or leave of absence. The Co-op and New Economics Foundation in their 2017 report [36] "The Cost of Loneliness for UK Employers" estimated the cost of loneliness to employers at £2.5 billion a year. However, it is not just individuals in employment that contribute to society; the unpaid workforce contributes greatly to the economy. Costs of losses due to ill-health or disengagement in unpaid work related to loneliness, which is typically undertaken by parents, such as informal care, would also impact on productivity losses. A report published by Carers UK [37] estimated that unpaid carers save the UK £132 billion a year. Thus, in any economic evaluations of loneliness specific to parenthood it would be important to include cost of losses associated with informal caring and unpaid work.

There are two economic evaluations of loneliness both of which have focused on older adults [38,39]. In one, lonely elderly were estimated to cost health and social care services more than £1,700 per person over a 10-year period, with estimated costs to be in excess of £6,000 per person for the most severely lonely [38]. While there has not been an economic evaluation on parental loneliness, it has been linked to depression [9-12]. Bauer et al. [40] has estimated the overall cost to society of a single case of perinatal depression at around £74,000.

There is some indication of economic costs of maternal loneliness in relation to healthcare utilization. In

one study [20] lonely pregnant mothers were twice as likely than non-lonely pregnant mothers to be high hospital utilizers (greater than one unscheduled hospital visit). Increased healthcare utilization associated with parental loneliness has direct monetary impacts on society and needs further examination. As parental loneliness has intergenerational impacts, estimation of economic costs will also need to include impacts on both mother and child.

## REDUCING PARENTAL LONELINESS

There is emerging qualitative research suggesting that loneliness in parenthood is associated with dislocation from previous identities and relationships and fears of telling others due to expectations of negative evaluation. Further evidence indicates that those with intersecting identities (ie, young parents, parents with children with disabilities, parents from an ethnic minority) are at increased risk of experiencing loneliness [41-43]. However, evidence for effective interventions to reduce loneliness during pregnancy and in parenthood is sparse. A recent scoping review [44] revealed only 14 parenting interventions where loneliness was measured as an outcome and none of these was specifically designed to target loneliness. Less than half of these interventions showed positive effects on parental loneliness. The review identified peer support interventions as useful for reducing loneliness as these develop communication skills and form new social connections. This aligns with wider literature that demonstrates impacts of peer support on feelings of validation, normalization and reassurance [45], and on reductions in negative emotional impacts (such as social isolation) through building social connections and networks [46].

## GAPS AND FUTURE DIRECTIONS

Our review has highlighted key gaps in the literature. First there is a need to address the physical health impacts of loneliness in pregnancy and parenthood. Although there is evidence to indicate that there is an association between loneliness and depression in parenthood, further work to explore for the reciprocal relationship apparent in other cohorts should be undertaken.

A further issue is that little is currently known about why parents may experience loneliness and which parents are at increased risk. It is important in future research that new parents are considered an important cohort for examination of the experience and impacts of loneliness, in a similar way as elderly populations have been.

Although we have highlighted links to wider economic analyses to provide information about the potential costs of parental loneliness, more dedicated work is

needed. It is important that gaps are addressed to fully understand and establish the economic and societal costs of parental loneliness. As parental loneliness has wide ranging and intergenerational impacts it is important that a multi-sectoral perspective is used when examining its costs.

## CONCLUSION

Reducing loneliness has been highlighted as a policy area and there is a high prevalence of loneliness in parents. Parental loneliness has vast health and well-being impacts relating to the parent, their children, and the immediate and wider family, but also has important societal and economic costs, thus it is essential to develop loneliness intervention for parents. There are some important gaps in our current understanding of parental loneliness and it is important that the experience of loneliness in parenthood is given as much focus in research as it is in other cohorts. In order to progress this field, there needs to be engagement with parents experiencing loneliness and their families to discover what loneliness means in this context. Once we have a better grasp of this research area, we can then develop novel interventions to support parents and combat loneliness. These interventions can then be assessed for their clinical success and cost-effectiveness via trials, process evaluations and qualitative research to help inform practice and policy. The health of future generations of parents and their children will be improved by fully understanding the impact of loneliness and targeting reducing loneliness in pregnancy and parenthood.

## REFERENCES

1. Peplau LA, Perlman D. Loneliness: A sourcebook of current theory, research, and therapy. New York: John Wiley & Sons; 1982.
2. Van Baarsen B, Snijders TA, Smit JH, Van Duijn MA. Lonely but not alone: emotional isolation and social isolation as two distinct dimensions of loneliness in older people. *Educ Psychol Meas.* 2001;61(1):119-35.
3. Hawkley LC, Cacioppo JT. Loneliness matters: a theoretical and empirical review of consequences and mechanisms. *Ann Behav Med.* 2010 Oct;40(2):218-27.
4. Holt-Lunstad J, Smith TB, Baker M, Harris T, Stephenson D. Loneliness and social isolation as risk factors for mortality: a meta-analytic review. *Perspect Psychol Sci.* 2015 Mar;10(2):227-37.
5. Gerst-Emerson K, Jayawardhana J. Loneliness as a public health issue: the impact of loneliness on health care utilization among older adults. *Am J Public Health.* 2015 May;105(5):1013-9.
6. Department for Digital C. Media and Sport A connected society: A strategy for tackling loneliness – laying the foundations for change. London. In: Department for Digital

- C, Media and Sport editor. London 2018.
7. Children A. 'It Starts with Hello', A report looking into the impact of loneliness in children, young people and families. London 2017.
  8. Luoma I, Korhonen M, Puura K, Salmelin RK. Maternal loneliness: concurrent and longitudinal associations with depressive symptoms and child adjustment. *Psychol Health Med*. 2019 Jul;24(6):667–79.
  9. Badaru UM, Ogwumike OO, Adeniyi AF, Kaka B. Psychosocial adversities and depression in mothers of children with cerebral palsy in Nigeria. *J Pediatr Neurol*. 2013;11(1):1–7.
  10. Zaidi F, Nigam A, Anjum R, Agarwalla R. Postpartum depression in women: a risk factor analysis. *J Clin Diagn Res*. 2017 Aug;11(8):QC13–6.
  11. Junttila N, Ahlqvist-Björkroth S, Aromaa M, Rautava P, Piha J, Räihä H. Intercorrelations and developmental pathways of mothers' and fathers' loneliness during pregnancy, infancy and toddlerhood—STEPS study. *Scand J Psychol*. 2015 Oct;56(5):482–8.
  12. Kruse JA, Williams RA, Seng JS. Considering a relational model for depression in women with postpartum depression. *Int J Childbirth*. 2014;4(3):151–68.
  13. Qualter P, Brown SL, Munn P, Rotenberg KJ. Childhood loneliness as a predictor of adolescent depressive symptoms: an 8-year longitudinal study. *Eur Child Adolesc Psychiatry*. 2010 Jun;19(6):493–501.
  14. Cacioppo JT, Hawkley LC, Thisted RA. Perceived social isolation makes me sad: 5-year cross-lagged analyses of loneliness and depressive symptomatology in the Chicago Health, Aging, and Social Relations Study. *Psychol Aging*. 2010 Jun;25(2):453–63.
  15. Lauder W, Mummery K, Jones M, Caperchione C. A comparison of health behaviours in lonely and non-lonely populations. *Psychol Health Med*. 2006 May;11(2):233–45.
  16. Hanna K, Cross J, Nicholls A, Gallegos D. The association between loneliness or social isolation and food and eating behaviours: A scoping review. *Appetite*. 2023 Oct;191:107051.
  17. Joy EA, Van Hala S, Marshall E. Pregnancy as an opportunity for behavior change. *Curr Sports Med Rep*. 2004 Dec;3(6):327–9.
  18. Poston L, Bell R, Croker H, Flynn AC, Godfrey KM, Goff L, et al.; UPBEAT Trial Consortium. Effect of a behavioural intervention in obese pregnant women (the UPBEAT study): a multicentre, randomised controlled trial. *Lancet Diabetes Endocrinol*. 2015 Oct;3(10):767–77.
  19. Owens J, Sirois F. Review of the impact of loneliness and social isolation on health and well-being and whether people who experience loneliness/social isolation have higher use of public services. GSR report, 2019.
  20. Geller JS. Loneliness and pregnancy in an urban Latino community: associations with maternal age and unscheduled hospital utilization. *J Psychosom Obstet Gynaecol*. 2004;25(3-4):203–9.
  21. Schuez-Havupalo L, Lahti E, Junttila N, Toivonen L, Aromaa M, Rautava P, et al. Parents' depression and loneliness during pregnancy and respiratory infections in the offspring: A prospective birth cohort study. *PLoS One*. 2018 Sep;13(9):e0203650.
  22. Van den Bergh BR, Mulder EJ, Mennes M, Glover V. Antenatal maternal anxiety and stress and the neurobehavioural development of the fetus and child: links and possible mechanisms. A review. *Neurosci Biobehav Rev*. 2005 Apr;29(2):237–58.
  23. Beijers R, Buitelaar JK, de Weerth C. Mechanisms underlying the effects of prenatal psychosocial stress on child outcomes: beyond the HPA axis. *Eur Child Adolesc Psychiatry*. 2014 Oct;23(10):943–56.
  24. Zijlmans MA, Korpela K, Riksen-Walraven JM, de Vos WM, de Weerth C. Maternal prenatal stress is associated with the infant intestinal microbiota. *Psychoneuroendocrinology*. 2015 Mar;53:233–45.
  25. Junttila N, Vauras M. Loneliness among school-aged children and their parents. *Scand J Psychol*. 2009 Jun;50(3):211–9.
  26. van Roekel E, Scholte RH, Verhagen M, Goossens L, Engels RC. Loneliness in adolescence: gene x environment interactions involving the serotonin transporter gene. *J Child Psychol Psychiatry*. 2010 Jul;51(7):747–54.
  27. Salo AE, Junttila N, Vauras M. Social and emotional loneliness: longitudinal stability, interdependence, and intergenerational transmission among boys and girls. *Fam Relat*. 2020;69(1):151–65.
  28. Bartels M, Cacioppo JT, Hudziak JJ, Boomsma DI. Genetic and environmental contributions to stability in loneliness throughout childhood. *Am J Med Genet B Neuropsychiatr Genet*. 2008 Apr;147(3):385–91.
  29. Boomsma DI, Willemsen G, Dolan CV, Hawkley LC, Cacioppo JT. Genetic and environmental contributions to loneliness in adults: the Netherlands twin register study. *Behav Genet*. 2005 Nov;35(6):745–52.
  30. Mahon NE, Yarcheski A, Yarcheski TJ, Cannella BL, Hanks MM. A meta-analytic study of predictors for loneliness during adolescence. *Nurs Res*. 2006;55(5):308–15.
  31. Qualter P, Brown SL, Rotenberg KJ, Vanhalst J, Harris RA, Goossens L, et al. Trajectories of loneliness during childhood and adolescence: predictors and health outcomes. *J Adolesc*. 2013 Dec;36(6):1283–93.
  32. Junttila N, Vauras M, Laakkonen E. The role of parenting self-efficacy in children's social and academic behavior. *Eur J Psychol Educ*. 2007;22(1):41–61.
  33. Alvik A. Variables predicting low infant developmental scores: maternal age above 30 years is a main predictor. *Scand J Public Health*. 2014 Mar;42(2):113–9.
  34. Zafar N, Kausar R. Psychosocial implications of early father separation for adolescents and their mothers. *Age (Dordr)*. 2015;47(5):55.
  35. Stednitz JN, Epkins CC. Girls' and mothers' social anxiety, social skills, and loneliness: associations after accounting for depressive symptoms. *J Clin Child Adolesc Psychol*. 2006 Feb;35(1):148–54.
  36. Foundation TNE. The cost of loneliness for UK employers. 2017.
  37. Buckner L, Yeandle S. Valuing carers 2015. London: Carers UK; 2015.
  38. McDavid D, Bauer A, Park AL. Making the economic case for investing in actions to prevent and/or tackle loneliness: a systematic review. London: London School of Economics and Political Science; 2017.

39. Mihalopoulos C, Le LK, Chatterton ML, Bucholz J, Holt-Lunstad J, Lim MH, et al. The economic costs of loneliness: a review of cost-of-illness and economic evaluation studies. *Soc Psychiatry Psychiatr Epidemiol*. 2020 Jul;55(7):823–36.
40. Bauer A, Parsonage M, Knapp M, Iemmi V, Adelaja B. Costs of perinatal mental health problems. London: Centre for Mental Health. London School of Economics; 2014.
41. Taylor BL, Howard LM, Jackson K, Johnson S, Mantovani N, Nath S, et al. Mums alone: exploring the role of isolation and loneliness in the narratives of women diagnosed with perinatal depression. *J Clin Med*. 2021 May;10(11):2271.
42. Nowland R, Thomson G, Cross L, Whittaker K, Gregory P, Charles J, et al. Exploring blog narratives of parental loneliness: A thematic network analysis. *Curr Res Behav Sci*. 2023;5:100137.
43. Adlington K, Vasquez C, Pearce E, Wilson CA, Nowland R, Taylor BL, et al. ‘Just snap out of it’ - the experience of loneliness in women with perinatal depression: a Meta-synthesis of qualitative studies. *BMC Psychiatry*. 2023 Feb;23(1):110.
44. Nowland R, Thomson G, McNally L, Smith T, Whittaker K. Experiencing loneliness in parenthood: a scoping review. *Perspect Public Health*. 2021 Jul;141(4):214–25.
45. Dennis CL. Peer support within a health care context: a concept analysis. *Int J Nurs Stud*. 2003 Mar;40(3):321–32.
46. Thomson G, Balaam MC, Hymers K. Building social capital through breastfeeding peer support: insights from an evaluation of a voluntary breastfeeding peer support service in North-West England. *Int Breastfeed J*. 2015 Apr;10(1):15.