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HEALTH AND WELL-BEING OF PARENTS CARING FOR CHILDREN WITH ACTIVITY LIMITATIONS: A CROSS-NATIONAL COMPARATIVE STUDY

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ABSTRACT

The health and well-being of parents raising children with disabilities is increasingly gaining importance in demographic and public health research. Caregiving responsibilities associated with childhood disability may create substantial emotional, physical, and social strain, potentially affecting parental well-being. This study examines cross-national differences in parental health among families of children with activity limitations (CWAL), using data from the second wave of the Generations and Gender Survey (GGS-II) across thirteen countries. We compare mothers and fathers with at least one child with activity limitations to those whose children do not, across multiple dimensions of well-being, including self-rated health, depression, loneliness, happiness, and life satisfaction. The results reveal a consistent pattern of disadvantage among parents of children with activity limitations across countries. Compared to parents of children without activity limitations, they report significantly poorer health outcomes and lower levels of subjective well-being. These disparities are particularly noticeable among mothers, who consistently occupy the most disadvantaged position across indicators. While the disadvantages associated with child's activity limitations are widespread, the degree varies across national contexts. Countries characterized by higher levels of public expenditure on disability and family benefits tend to show more favourable parental health and well-being outcomes. Taken together, the findings highlight the cumulative health burden associated with caregiving for children with activity limitations and underscore the importance of institutional support systems. They further demonstrate that gender inequalities in parental well-being remain a critical dimension of this experience across diverse welfare contexts.

KEYWORDS

Children with Activity Limitations, Parental Well-Being, Maternal Health, Families, GGS

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1 INTRODUCTION

In recent years, researchers and policymakers have turned their attention to the health and well-being of disabled children and parents raising children with disabilities. The Convention on the Rights of Persons with Disabilities (CRPD) (Nations, 2006) establishes a clear international standard for the rights of disabled children. Article 7 obliges States to ensure that children with disabilities enjoy all human rights and freedoms on an equal basis with other children, emphasizing that the best interests of the child must be a primary consideration in all relevant actions. This international framework positions children's equality and child-centred decision-making as core obligations for governments and provides a crucial benchmark against which national disability and child protection policies can be assessed (Nations, 2006).

The World Health Organization (WHO) defines disability as "… an umbrella term for impairments, activity limitations or participation restrictions" (Organization, 2001, p. 3). There are various approaches to defining disability. From a medical perspective, it is viewed as a biological impairment, whereas a social perspective understands it as the outcome of physical and societal barriers. This social dimension is not confined to the individual's own participation in community life; rather, it extends to their immediate social network and the wider community.

However, disabled children do not live in isolation, and their well-being and the well-being of their family members are strongly linked. At the individual level, research suggests that disability not only affects the disabled individual's life, but also the lives of the surrounding people, primarily family members: families with disabled children have more social, psychological, and health challenges and need more effective interventions than families without disabled children (Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020). Critical disability studies integrate medical, social, and political dimensions of disability, emphasizing that the disadvantages experienced by parents of disabled children arise not from the child's impairment itself, but from the social and structural factors that surround it(Bixby, 2023). This perspective is embraced in the European Disability Forum (EDF) (2020)recommendation that families of children with disabilities should be meaningfully involved in decision-making processes that affect them.

Further evidence from the European Disability Forum (2020) shows a strong link between having a disabled child and an increased risk of poverty, driven by reduced household income, increased care responsibilities disproportionately carried by women, and the substantial costs associated with disability. Families with a disabled child tend to experience greater economic hardship(Roddy, 2022), and lower overall well-being compared to those without disabilities(Reichman et al., 2008). Single-parent households are at even greater risk, often relying solely on insufficient social protection(Forum, 2020). Again, single parents carry a heavier burden when raising a child with disability. They struggle with mental and physical health issues more than single parents without disabled children, along with limited job opportunities, which is worsened by the caregiving responsibilities(Balbo & Burciu, 2026).

Among family members, being the main caregiver (mostly the mother) makes the person more vulnerable(Balbo & Bolano, 2024). Mothers of children with disabilities may face different challenges and have more duties as mothers of children without disabilities (Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020). Research indicates that these mothers experience a higher risk of depression (Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020) and more health problems, such as sleeping disorders, cardiovascular disease, and back pain, than fathers(Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020). Indeed, the impact of children's disability differs remarkably by gender. Fathers of disabled children report fewer emotional exchanges with others and weaker social support, while mothers are more likely to experience social isolation, feelings of emptiness, and rejection (Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020).

More specifically on the care burden of mothers of children with disabilities, Öztürk and Alemdar (2023) highlight that in Turkey, mothers are almost always the main caregiver of a disabled child, which has negative effects on their health and quality of life. Since in many cultures mothers are considered to be the primary caregivers of the children(Currie & Pozniak, 2024), their well-being is especially important, as their health directly affects their ability to care for their child. Moreover, with the increase in the care burden of the mother, the family's quality of life decreases(Öztürk & Alemdar, 2023). Consequently, supporting the mother's well-being benefits both her and the child.

Regarding mental health, mothers of children with disabilities report high rates of distress, depression, anxiety, and suicidality in comparison with the general population(Gilson et al., 2018). Further, financial burdens of care and treatment, along with reduced employment opportunities, significantly increase mothers' anxiety and depression levels. These emotional and financial strains negatively affect their overall quality of life, leading to poorer sleep, lower energy, and reduced physical activity(Yarar et al., 2021). The partnership context can also affect the well-being of parents while living with a disabled child. Research on parental depression has shown that single mothers with a disabled child are more vulnerable to severe depression than mothers who live with a partner(Olsson & Hwang, 2001). Struggles associated with

raising a child with a disability may contribute to interparental conflict and, in turn, affect relationship satisfaction (Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020).

Much of the existing literature relies on single-country data, and cross-national comparisons remain relatively limited (notable exception:(Eapen et al., 2023)). Research on the health and well-being of parents raising children with disabilities has therefore become increasingly important in demographic and public health literature. While many studies document the challenges associated with caregiving, comparative evidence on parents of children with and without activity limitations across diverse national contexts remains less systematically developed.

In this paper, we use the Global Activity Limitation Indicator (GALI) to measure child health-related activity limitations. Therefore, children who were reported as *severely limited* or *limited but not severely*, and who had experienced such limitations for at least six months at the time of interview, are classified as **children with activity limitations (CWAL).**

This study adopts a gender perspective to examine the determinants of parental health among families of CWAL. Specifically, we analyse maternal and paternal outcomes across five well-being domains: depression, happiness, self-rated health, loneliness, and life satisfaction. Our comparative design contrasts four groups: mothers and fathers of CWAL, and mothers and fathers of non-CWAL, and extends the analysis to cross-national variation. Using data from 13 countries, we investigate how the well-being gap between parents of CWAL and those of non-CWAL differs across national contexts, and whether these differences are associated with country-level public expenditure on disability and family support. This cross-national approach is motivated by the premise that parental health outcomes are shaped by broader institutional and policy environments, which may moderate the extent of disadvantage experienced by families raising children with activity limitations.

2 DATA AND METHODS

2.1 SAMPLE AND DEFINITIONS

We used data from the second round of the Generations and Gender Survey (GGS-II) (Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020), which was collected between 2020 and 2023, mostly by Computer-Assisted Web Interviewing (CAWI). It has comprehensive information on both physical and mental health. GGS-II data includes questions addressing health conditions, such as self-rated general health, and limitations in performing daily activities for all respondents. Psychological well-being is assessed through measures of happiness, loneliness, and depression. Also, parents in the sample were asked whether their child has a limitation. The survey does not provide a precise definition of "limitation", and responses may encompass a variety of physical, cognitive, or sensory difficulties. The answers are "severely limited", "limited, but not severely", and "not limited" for at least the past six months. This indicator is known as the Global Activity Limitation Indicator (GALI)(Eurostat). In this article, children with activity limitations (CWAL) were defined as children who, at the time of the interview, had been limited in activities people usually do because of a health problem for at least the past six months, either severely or limited but not severely.

Our sample includes mothers and fathers with and without CWAL who participated in the GGS-II, aged 18 to 50 years, from 13 countries (Argentina, Austria, Germany, Denmark, Estonia, Finland, France, Hong Kong, Croatia, the Netherlands, Norway, the United Kingdom, and Uruguay) with released data. In this age range, the total number of parents without CWAL was 35,421, and the total number of parents with at least one CWAL in the household was 6,954. Overall, 14.6 percent

mentioned having children with activity limitations. Note, that we did not restrict to minor children but included all children living in the household, irrespective of their age.

The programming language R was used for statistical computations and visualizations. All analyses are weighted, adjusting for age and gender in the various countries. Moreover, we applied sampling weights to account for different sample sizes across countries, and population weights to adjust for varying national population magnitudes. This dual weighting ensures that pooled estimates are not disproportionately influenced by over-represented countries, thereby yielding more representative cross-national inferences. The analysis comprises both descriptive and multivariable analyses.

2.1.1 PARENTAL WELL-BEING

Parents' self-rated health is captured via the question "How is your health in general?", with the following answer categories: (1) Very good, (2) Good, (3) Fair, (4) Bad, and (5) Very bad. Overall, self-rated health is a widely used and reliable indicator of health status, despite possible different interpretations between individuals (Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020).

To calculate loneliness, the De Jong Gierveld Loneliness Scale (2006) was used in the GGS-II questionnaire. It was measured using a six-item scale covering perceived social support, trust, and feelings of emptiness, with responses coded as "yes", "more or less", or "no". Items were dichotomized following the authors' coding guidelines and summed to yield a total score ranging from 0 (not lonely) to 6 (very lonely).

Life satisfaction measures how people evaluate their life as a whole and is a subjective indicator that complements more objective indicators of the quality of people's lives(OECD, 2024, p. 110). Life satisfaction was asked through the question "How satisfied are you with your life as a whole nowadays?" and the respondents gave scores from 0 for "extremely dissatisfied" to 10 for "extremely satisfied".

Happiness was measured using a single-item 11-point scale ranging from 0 ("extremely unhappy") to 10 ("extremely happy"). In line with standard practice in large-scale surveys, the variable was treated as continuous.

Depression in the current study was measured with the CES-D scale(Radloff, 1977), a scale useful to study the relationship between depression and other variables across population subgroups(Radloff, 1977). There are several short forms of the CES-D, and a validated short-form CES-D-5 (Shrout & Yager, 1989) is used in the GGS-II questionnaire. The five items "Couldn't shake off the blues," "Felt depressed," "Felt life was a failure," "Felt fearful," "Felt sad" were asked, and the respondents answered how many times they had this experience within the last week, with the options being "1 = never", "2 = sometimes", "3 = often", "4 = most or all of the time". The scores for all five questions were summed up, based on Radloff's method. Depression was treated as a continuous variable, with higher scores indicating a higher degree of depressive symptoms.

2.2 METHODS

First, we conducted descriptive analyses of parental health and well-being in the pooled sample. Mean scores for self-rated health (SRH), depression, happiness, life satisfaction, and loneliness were presented separately for parents with and without a child with activity limitations (CWAL).

Second, we examined country-level CWAL and gender gaps in parental health and well-being across the thirteen countries. The CWAL gap was defined as the difference in the mean value of each indicator between parents with and without CWAL and was calculated separately for mothers and fathers. The gender gap was defined as the difference between mothers' and fathers' mean scores and was calculated separately for parents with and without CWAL. To facilitate comparisons across outcomes measured on different scales, the gaps were standardized by the range of each outcome. Loneliness was measured on a scale from 0 to 6, SRH from 1 to 5, and the other indicators from 0 to 10. The formulas are presented below:

$$Gap = \frac{\bar{Y}_{group1} - \bar{Y}_{group2}}{S_o}$$

$\bar{Y}$ = Mean of health indicator

$S_o = \max(Yo) - \min(Yo)$

More specifically:

$$\text{CWAL Gap}_{g,o} = \frac{\bar{Y}_{o,g,\text{CWAL}} - \bar{Y}_{o,g,non\text{CWAL}}}{S_o}$$

$g \in \{\text{mothers, fathers}\}$

$o \in \{\text{depression, happiness, life satisfaction, loneliness}\}$

$$\text{Gender Gap}_{d,o} = \frac{\bar{Y}_{o,fathers,d} - \bar{Y}_{o,mothers,d}}{S_o}$$

$d \in \{\text{CWAL, nonCWAL}\}$

Third, we conducted multivariable analyses to examine whether having a CWAL was associated with parental health and well-being after adjustment for sociodemographic characteristics. For SRH, we fitted a linear mixed-effects regression model with CWAL status as the main explanatory variable and age, gender, partnership status, and educational attainment (International Standard Classification of Education [ISCED]) as covariates. Country was included as a random intercept to account for the clustering of individuals within countries and unobserved cross-national differences in baseline health. Results are reported as unstandardized regression coefficients (β) with 95% confidence intervals. The coefficients represent adjusted differences in mean SRH scores; because higher SRH scores indicate better health, positive coefficients indicate better SRH and negative coefficients indicate poorer SRH. The same modelling strategy was applied to depression, loneliness, happiness, and life satisfaction, with results reported in Appendix Tables A9–A12.

Fourth, because the study focuses on cross-national variation in the associations between CWAL status, gender, and parental health and well-being, we estimated separate regression models for each of the thirteen countries. These models estimated the associations of CWAL status and gender with each health and well-being outcome, adjusting for age, educational attainment, and partnership status.

Finally, to explore whether cross-national differences in parental health and well-being were related to differences in institutional support, we examined the associations between country-level public expenditure on disability and family benefits and the estimated health and well-being outcomes.

3 RESULTS

3.1 DESCRIPTIVE RESULTS ON PARENTAL WELL-BEING

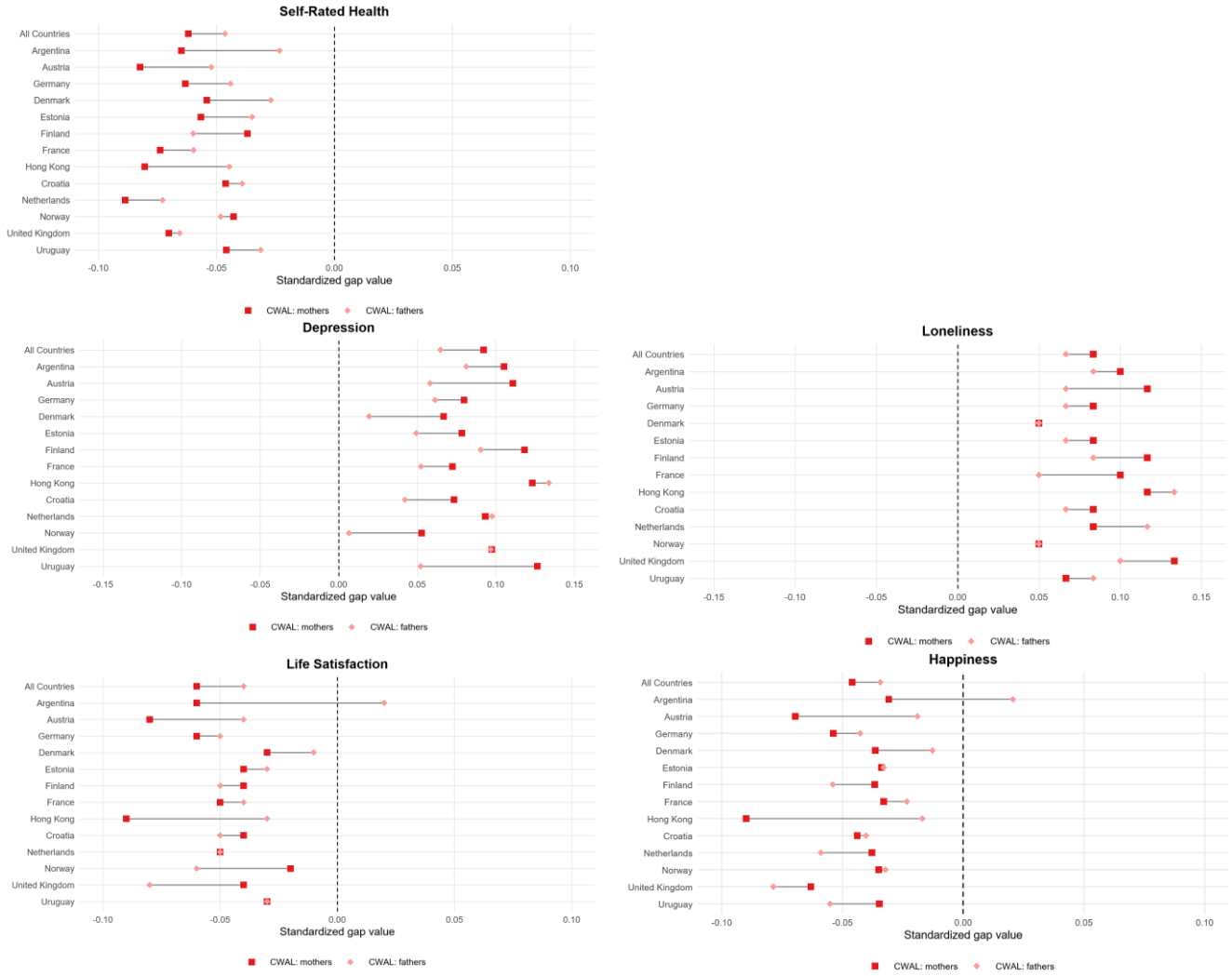
Parents of CWAL reported poorer self-rated health (SRH) than parents of non-CWAL across the thirteen countries. Mothers and fathers of CWAL had mean SRH scores of 3.7 and 3.8 (out of 5), respectively, compared with 4.0 and 4.1 among parents of non-CWAL (see appendix **Fehler! Verweisquelle konnte nicht gefunden werden.**Table A1). Our results indicate that parents of CWAL reported higher loneliness than parents of non-CWAL (mothers: 2.7 versus 2.2; fathers: 2.6 versus 2.2; Table A2). Also, mothers generally felt lonelier than fathers. For life satisfaction, the pooled overall mean was 7.8. In total, both mothers and fathers of CWAL in all the studied countries had lower life satisfaction (mothers 7.3 and fathers 7.5), compared to mothers and fathers of non-CWAL (7.9 for mothers as well as fathers) (Table A3). Mothers of CWAL reported the lowest level of happiness (7.4; Table A4), followed by fathers (7.6). Mothers as well as fathers of non-CWAL reported the highest levels of happiness (7.9). Regarding depression, a clear pattern emerges in which mothers of CWAL reported the highest depression scores, followed by fathers of CWAL, mothers of non-CWAL, and fathers of non-CWAL (8.3; 7.4; 7.4 and 6.8, respectively; Table A5), an ordering that shows the inverse of the observed happiness gradient.

Based on our descriptive analysis of SRH, loneliness score, life satisfaction, happiness score, and depression score, for the pooled sample as well as for the majority of individual countries, differences are larger for CWAL and non-CWAL than for gender. In these countries (Austria, Germany, Denmark, Estonia, Finland, Hong Kong, Croatia, the Netherlands, Norway, the United Kingdom, and Uruguay) mothers and fathers of CWAL have the lowest overall happiness and life satisfaction and higher depression and loneliness scores. On the other hand, in France, mothers reported higher levels of loneliness and depression regardless of whether their child had activity limitations. Similarly, in Argentina, mothers reported worse outcomes in depression, life satisfaction, and happiness, irrespective of the child's status.

In the next step, we analyse CWAL gaps and gender gaps, using standardized values as described above. Across all outcomes, CWAL gaps are consistently larger and more dispersed than gender gaps. Visually, the markers in Figure 1 (CWAL gaps) tend to lie farther from zero than the markers in Figure 2 (gender gaps), indicating that differences associated with having a CWAL generally exceed the magnitude of the differences between mothers and fathers (Figure 1). This pattern is particularly visible for loneliness and depression, where difficulties due to CWAL frequently reach standardized values around 0.05–0.1. Although gender gaps are typically smaller, in some cases, especially for depression, they are similar in size. Overall, Figure 1 suggests that the presence of a CWAL is an important element of parental well-being across different national contexts. At the same time, systematic gender asymmetries are evident.

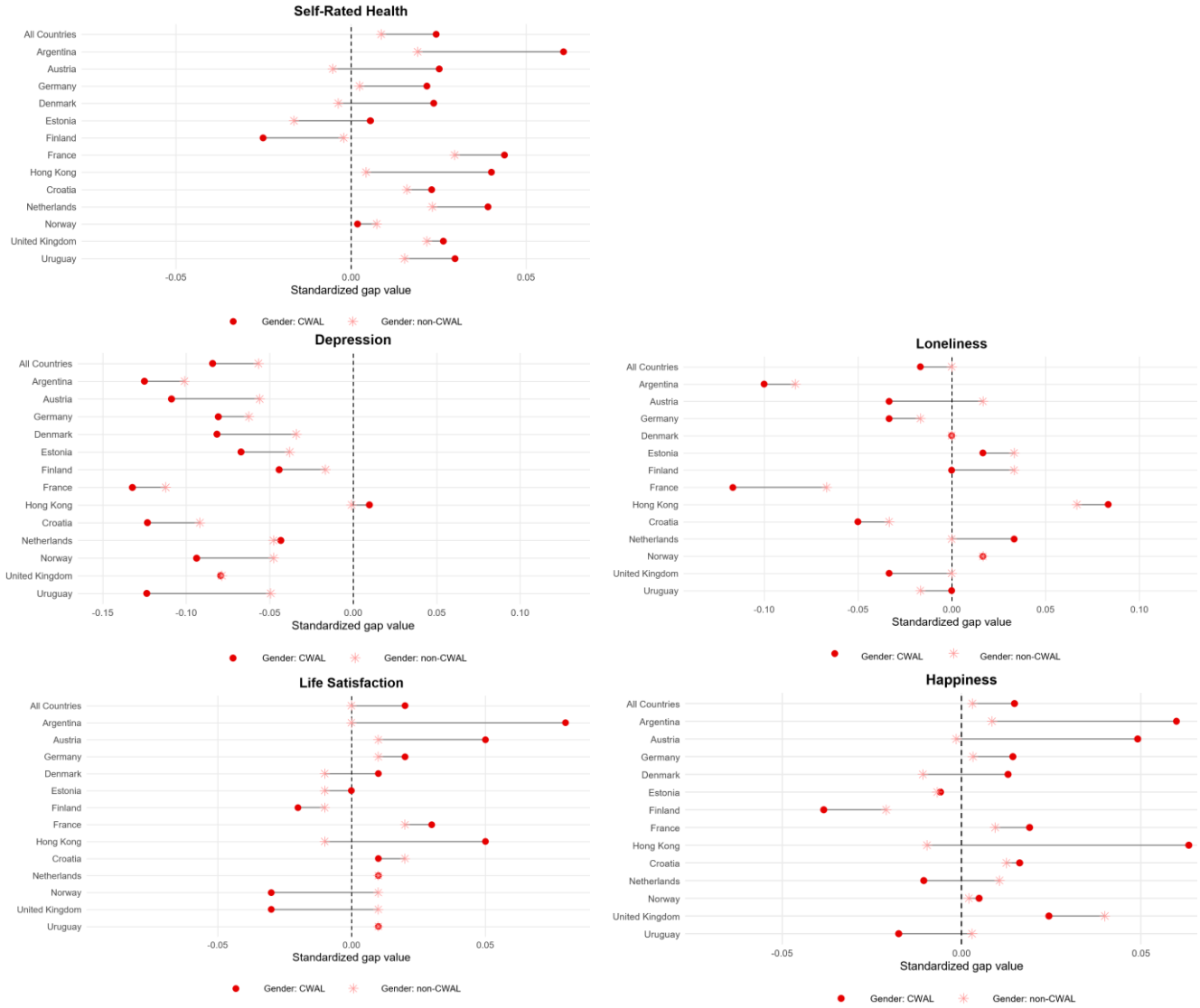
Gender gaps, as presented in Figure 2, are mostly negative for depression and loneliness, indicating that mothers generally report lower well-being than fathers. Moreover, challenges regarding raising CWAL, often appear larger for mothers than for fathers: in many countries, CWAL gap among mothers lies further from zero than the corresponding gap among fathers, suggesting that the well-being costs associated with raising a child with activity limitations are unevenly distributed within households. While the extent of these gaps varies across countries, with smaller difficulties in several Northern European cases, the overall pattern is consistent across indicators. The results point to the dual structure of inequality in parental wellbeing, in which gender differences persist but are generally lower than the impact of having CWAL.

FIGURE 1: CWAL-GAP BY TYPE OF PARENTAL WELL-BEING



Note:
Scores standardized to 0–1 before gap calculation
Source:
GGS-II

FIGURE 2: GENDER GAP BY TYPE OF PARENTAL WELL-BEING



Note:
Scores standardized to 0–1 before gap calculation
Source:
GGS-II

3.2 MULTIVARIABLE ANALYSIS OF FACTORS ASSOCIATED WITH PARENTAL HEALTH

In the multivariable analysis, the presence of CWAL, age, gender, partnership status, and educational attainment were significantly associated with self-rated health (SRH) (Table 1). Parents without CWAL reported significantly better SRH than parents with at least one CWAL, net of the other covariates. Gender differences were also statistically significant, with men reporting slightly better SRH than women. Age was negatively associated with SRH, with each additional year of age

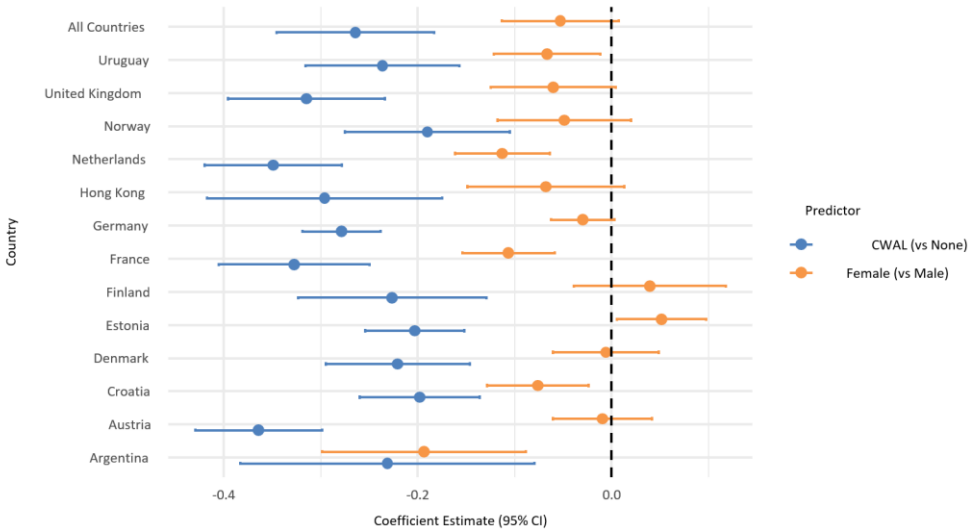
associated with a 0.011-point decrease in the SRH score. Partnership status was positively associated with SRH, with partnered respondents reporting better SRH than those without a partner. Educational attainment was also significantly associated with SRH, with the positive linear contrast indicating a trend toward better SRH at higher levels of education. Overall, the findings show that having a CWAL remains independently associated with poorer SRH after accounting for sociodemographic characteristics. Similar multivariable analyses for happiness, depression, loneliness, and life satisfaction are presented in Appendix Tables A9–A12.

TABLE 1 DETERMINANTS OF SRH

Predictor	Estimate (β)	Std. Error	Statistic	95% CI
Non-CWAL (Ref.: CWAL)	0.227***	0.0120	19.01	[0.20; 0.25]
Man (Ref.: Woman)	0.074***	0.0092	8.06	[0.06; 0.09]
Age	-0.011***	0.0005	-23.16	[-0.01; -0.01]
Partner (Ref.: No partner)	0.143***	0.0135	10.56	[0.12; 0.17]
Education (Linear trend)	0.418***	0.0397	10.55	[0.34; 0.50]
Intercept	4.021***	0.0649	62.00	[3.89; 4.15]

Source:
GGS-II
Note:
Estimates are unstandardized regression coefficients from a linear mixed-effects model with a random intercept for country. SRH ranges from 1 (very bad) to 5 (very good); positive coefficients indicate better SRH. *p < .05, **p < .01, ***p < .001.

FIGURE 3: ESTIMATED COEFFICIENTS FOR FEMALE GENDER AND CWAL ON SRH, BY COUNTRIES

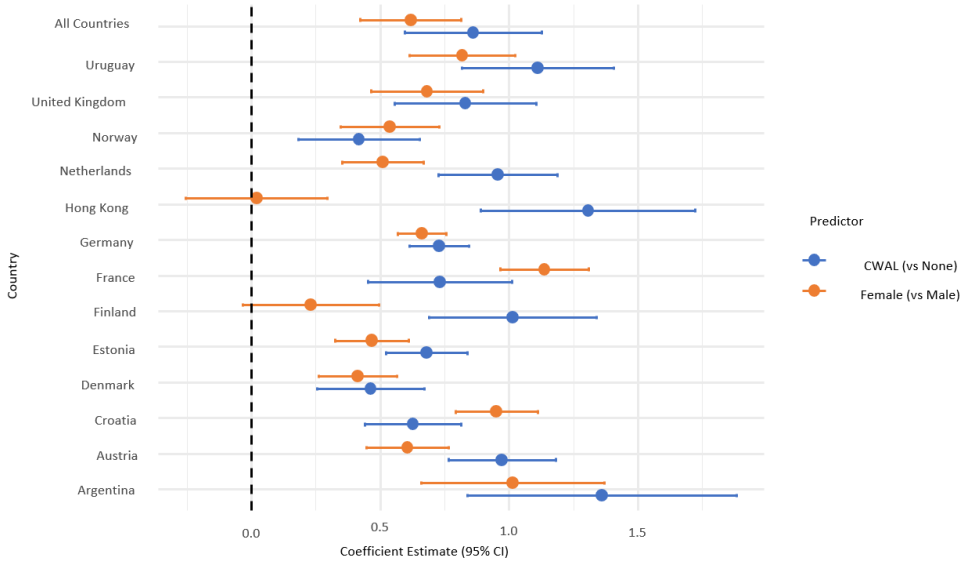


Source:
GGS-II

Figure 3 shows the estimated coefficients for being the female parent of CWAL, versus being the male parent of CWAL, in red, and the estimated coefficient of having CWAL versus not having CWAL, for female and male parents combined, in blue, with their respective confidence intervals. Both having CWAL and gender are associated with SRH. However, the

effect of having CWAL is substantially larger, with coefficients ranging from −0.2 to −0.4. In contrast, the effect of gender is relatively small (generally below −0.1) and, in most countries, close to zero. Notable exceptions are Denmark and Austria, where the effect is more noticeable. In Finland and Estonia, being the mother of CWAL is even associated with a positive effect on SRH.

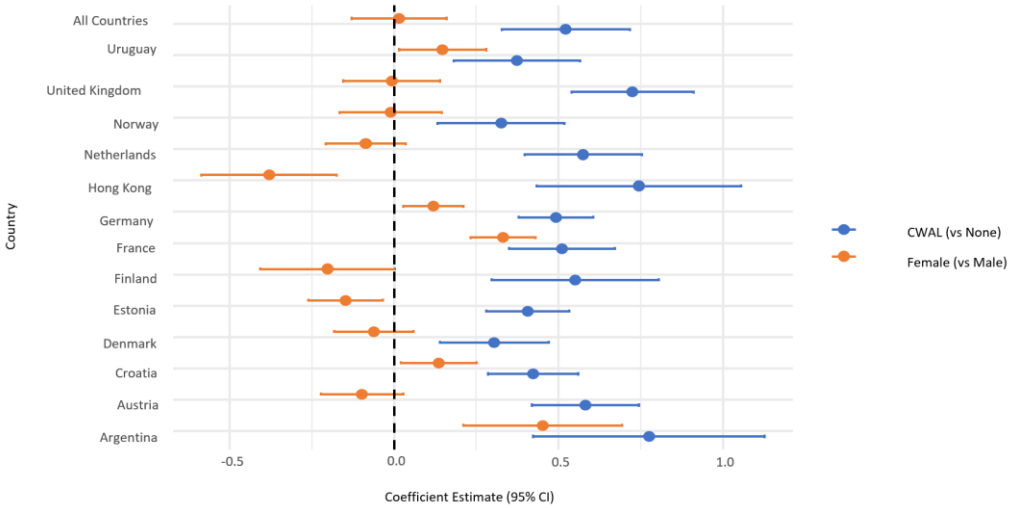
FIGURE 4: ESTIMATED COEFFICIENT FOR FEMALE GENDER AND CWAL ON DEPRESSION, BY COUNTRIES



Source:
GGS-II

Results for parental depression show that for all countries, the estimated coefficient for CWAL is positive, indicating higher depression scores among parents of these children (Figure 4). Estimates range from 0.4–0.5 in countries such as Norway and Denmark to substantially larger coefficients of around 1.2–1.5 in Argentina, Uruguay, and Hong Kong. Most European countries, including Germany, the Netherlands, Austria, and the United Kingdom, fall in an intermediate range of roughly 0.5–1.1, with confidence intervals generally remaining well above zero. The coefficient for female parent is also positive in most countries, indicating higher depression scores among mothers than fathers of CWAL, but its magnitude varies more across countries. Further, it is generally smaller in size than the coefficient for CWAL. Larger gender differences appear in France, Croatia, Argentina, and Uruguay, whereas the gender coefficient is close to zero or statistically weaker in Finland and Hong Kong.

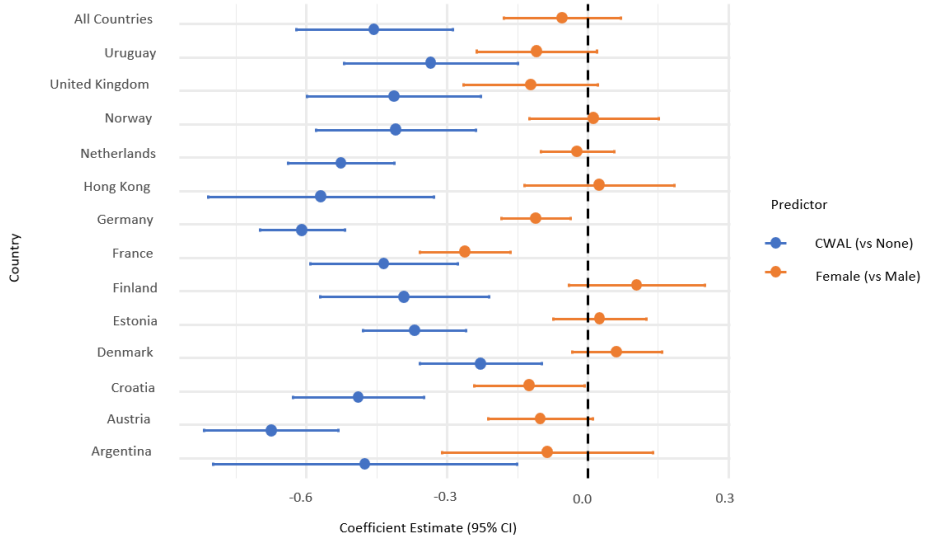
FIGURE 5: ESTIMATED COEFFICIENT FOR FEMALE GENDER AND CWAL ON LONELINESS, BY COUNTRIES



Source:
GGS-II

There is a strong association between CWAL and the level of loneliness (Figure 5). This intensity is seen more in countries such as Hong Kong, England, and Argentina than in others. Regarding being the female parent of CWAL, although most countries show a small estimated coefficient, it is interesting to note that some have a positive association and some have a negative one with loneliness. For example, being female in Argentina, Croatia, France, Germany, and Uruguay is positively associated with loneliness and is negatively associated with loneliness in Austria, Denmark, Estonia, Finland, Hong Kong, and the Netherlands.

FIGURE 6: ESTIMATED COEFFICIENT FOR FEMALE GENDER AND CWAL ON LIFE SATISFACTION, BY COUNTRIES

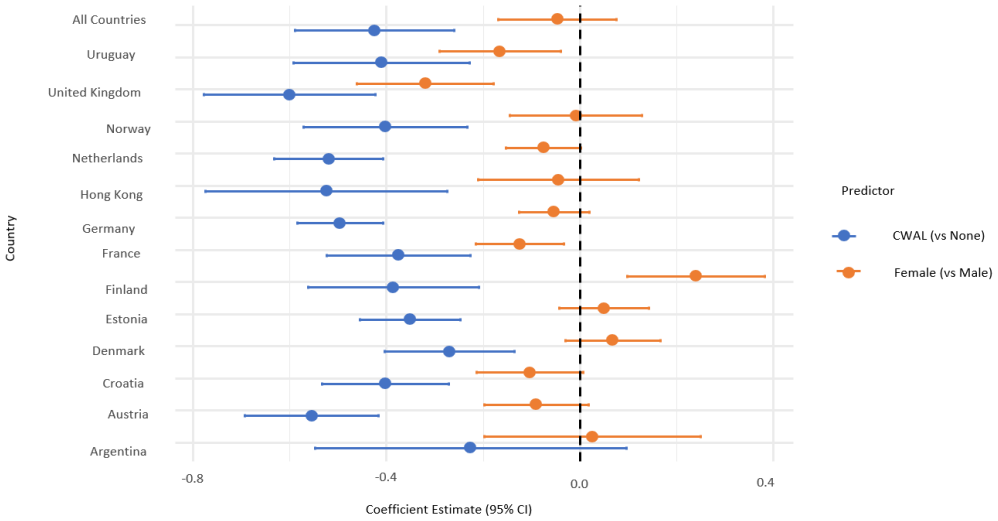


Source:
GGS-II

Regarding life satisfaction, the estimated coefficient for gender remains smaller than the one for CWAL (Figure 6). The largest negative coefficients associated with CWAL are observed in Austria, Germany, Hong Kong, and Argentina, while

the smallest is observed in Denmark. In contrast, the association between gender and life satisfaction is close to zero in most countries. However, France stands out, with a coefficient of around −0.3, suggesting that being a mother of CWAL there is associated with lower life satisfaction.

FIGURE 7: ESTIMATED COEFFICIENT FOR FEMALE GENDER AND CWAL ON HAPPINESS, BY COUNTRIES



Source:
GGS-II

Having a child with activity limitations and being female are both associated with lower levels of happiness, although the effect is more pronounced for CWAL than for gender (Figure 7). For CWAL, Hong Kong and the United Kingdom show among the largest negative coefficients (approximately −0.5 to −0.6). By contrast, the association between gender and happiness is generally weak and not consistently negative. In some countries, it is even positive, as observed in the Scandinavian countries Finland, Sweden, and Denmark.

3.3 SENSITIVITY ANALYSES

To further study the association between children's activity limitations and parental health, we restricted the analysis to parental life satisfaction among mothers and fathers with and without children with activity limitations under 18 years. Among respondents with minors, 14.4 percent reported having CWAL. The descriptive and multivariable results are in accordance with the analyses based on the sample, including children of any age. Mean scores for life satisfaction among parents with and without CWAL are provided in Table A6**Fehler! Verweisquelle konnte nicht gefunden werden.**. Results for the other health measures are available on request.
We also examined whether having more than one CWAL is associated with the life satisfaction of the families, and the results show that there is a slight difference among parents with more than one CWAL in the household (606 parents) (See appendix Table A7).

Another sensitivity analysis was conducted by dichotomizing SRH into "(very) good health" and "fair or (very) bad health". Across both specifications (the linear and dichotomized), the direction and significance of the estimated coefficients remain similar (See appendix Table A8).
The sensitivity analysis results regarding gender and CWAL gaps among parents of children under 18 years of age were consistent with the observed gender and CWAL gaps in parental wellbeing, regardless of children's age, as shown in Figure A1.

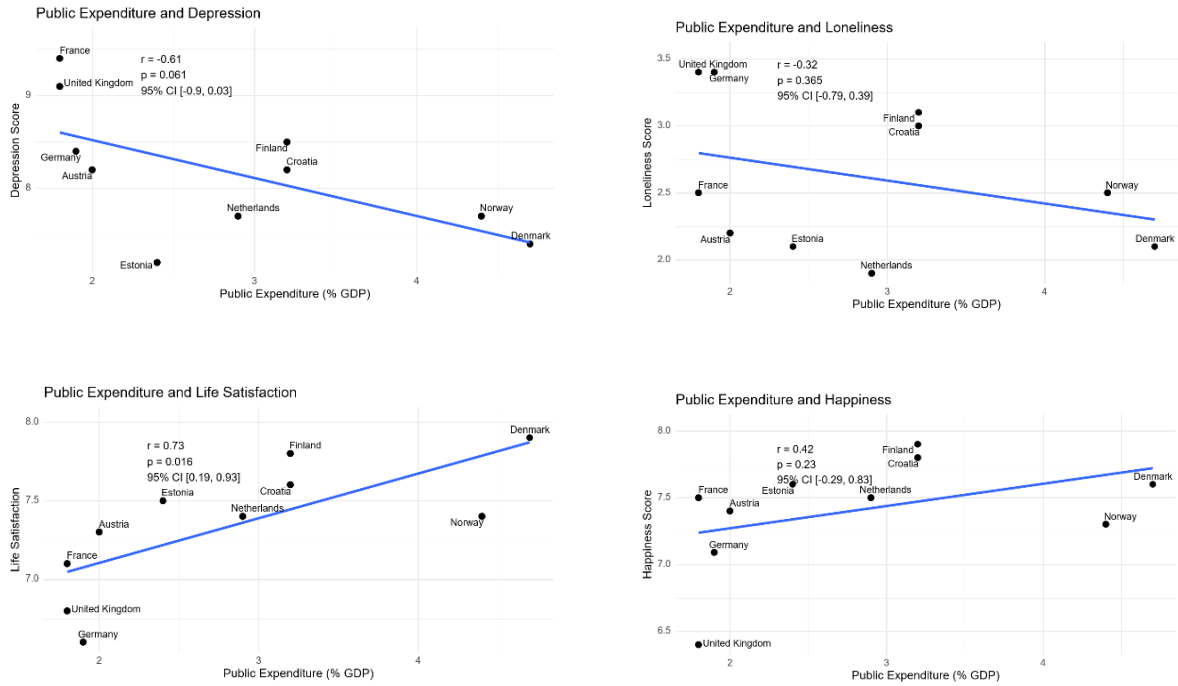
3.4 PUBLIC EXPENDITURE AND PARENTAL WELL-BEING

The comparison of public expenditures on disability and sickness cash benefits (% of GDP) (The OECD Social Expenditure Database (SOCX)) and public expenditures on family benefits by type of expenditure (cash and in kind, % of GDP) (The OECD Social Expenditure Database (SOCX)) across Austria, Denmark, Estonia, Finland, France, Germany, Netherlands, Norway, United Kingdom and Croatia suggests cross-country differences. A composite well-being index for parents of CWAL was created by combining standardized scores for depression, loneliness, life satisfaction, and happiness, with depression and loneliness reverse-coded so that higher scores consistently indicated better well-being.

Figure 8 shows that in countries with higher levels of public expenditure on disability and sickness and family, like Norway and Finland, parents of CWAL tend to report better well-being outcomes, including higher happiness scores and lower levels of depression and loneliness. In contrast, the United Kingdom and Germany, which report relatively lower average public expenditure on disability and sickness cash benefits between 2017 and 2021 (1.8% and 1.9% of GDP, respectively), show poorer well-being outcomes among parents of CWAL, compared to countries such as Norway (4.4%) and Denmark (4.7%), which report higher happiness levels and lower depression and loneliness scores. A moderate positive association ($r \approx .52$) emerged between national public expenditure on disability and sickness benefits and parental well-being (Figure 8).

Hong Kong, which also reports high levels of depression and loneliness and lower happiness scores, is not included in the OECD database. However, existing evidence indicates that public expenditure on disability allowances in Hong Kong accounted for approximately 0.17% of GDP in 2022–2023(Secretariat, 2025).

FIGURE 8: THE ASSOCIATION BETWEEN PUBLIC EXPENDITURE ON SUBJECTIVE WELL-BEING



Source:
The OECD Social Expenditure Database (SOCX)

4 DISCUSSION

Our findings support previous research on the health status of parents with disabled children, showing that compared to parents with non-disabled children, they report poor physical and mental health (Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020). The situation is worsened when it comes to mothers of disabled children, who suffer from worse mental and physical health status compared to mothers of children without disabilities (Buber-Ennser et al., 2016; Carlson & Williams, 2020; Georges et al., 2021; Hannafi & Marouani, 2023; Renner et al., 2020).

When it comes to loneliness, studies suggest that among middle-aged adults in Europe, Finland has the lowest prevalence of loneliness (4.0%), while Germany and the UK report moderate levels (~9.7–9.8%)(Surkalim et al., 2022). Although Croatia is not directly reported, Eastern European countries in the same region generally show higher prevalence than Northern Europe, suggesting Croatia likely has moderate loneliness, higher than Finland but comparable to Germany and the UK. For Hong Kong, there exist only a few studies on loneliness in the general population. Research on the elderly found a high level of loneliness among older adults in Hong Kong(Chou, 2018).

For life satisfaction, according to a recent OECD report (2024) among emerging economies, Argentina reported a life satisfaction score above 6. Further, the United Kingdom (6.9) and Germany (6.7) showed lower levels of life satisfaction than Nordic and Western European countries such as Finland (7.8), Denmark (7.5), and Austria (7.1). The OECD report has studied these populations regardless of gender, parenthood, and having a disabled child, and was conducted in 2021-22, almost the same time as the GGS-II was conducted, which shows the similarities in the results.

Our findings are not only consistent with these data but also demonstrate the differences that gender, parenthood, and CWAL can make.

In our study, Argentinians report the highest happiness scores among parents of both CWAL and non-CWAL. In contrast, parents in the United Kingdom, Hong Kong, and Germany report the lowest happiness levels, regardless of CWAL status, forming a cluster with consistently low scores among the 13 countries studied. This pattern aligns with global rankings from the World Happiness Report(2025), in which Hong Kong ranks 88th out of 147 countries (score: 5.22/10), while Finland and Denmark occupy the first and second positions, and Germany and the United Kingdom rank 22nd and 23rd, respectively.

Regarding economic support, the Global Disability Inclusion Report by UNICEF (2025) shows that disability-specific government expenditure varies widely across countries, ranging from below 0.02% of GDP to nearly 1%, with most governments allocating less than 0.1% of GDP despite the substantial share of the population experiencing disability. A small group of higher-spending countries, such as Argentina, Fiji, Namibia, Thailand, and Zambia, invest between 0.14% and 0.8% of GDP, while most others remain far lower. When assessed as a share of total government spending, the majority allocate under 0.5%, whereas higher-spending countries reach 0.5–2.1%. Across sectors, expenditure is mainly concentrated in social protection, health, education, and employment, with social protection, especially disability cash benefits, dominating in countries with higher spending. In high-income countries, disability-specific social protection spending averages 1.5% of GDP, though it ranges from below 0.5% (e.g., Chile, Turkey, Costa Rica) to over 4% (Denmark), according to OECD SOCX and ECLAC data. In contrast, low- and middle-income countries with stronger disability support systems typically invest around 0.5% of GDP in non-contributory disability cash benefits, with in-kind and contributory schemes generally far less developed. Overall, the report highlights a global pattern of very low, uneven, and often insufficient investment in disability inclusion(UNICEF, 2025).

5 CONCLUSION

Bringing together the analyses of general health, loneliness, life satisfaction, happiness, and depression reveals a coherent but uneven pattern of parental disadvantage across countries. At the individual level, general health is strongly structured by age, educational attainment, partnership status, and the presence of a CWAL. Across all countries, parents of CWAL report significantly worse health than parents of non-CWAL, an association that remains strong after accounting for sociodemographic characteristics and cross-national differences.

Across the thirteen countries, parents of CWAL, particularly mothers, consistently occupy the most disadvantaged position across indicators. This ordering is visible not only in health outcomes, but also in loneliness, life satisfaction, happiness, and depression, forming a cumulative gradient of disadvantage. Yet the country-level analyses demonstrate that this is embedded within distinct national profiles. In countries such as Germany, the United Kingdom, and Hong Kong, high loneliness scores coincide with poor general health, low happiness, and elevated depression, indicating a clustering of adverse outcomes. In contrast, countries such as Finland and Denmark combine relatively better general health with higher happiness and lower depression.

The alignment between well-being outcomes and public investment further underscores the role of institutional context in shaping parental health. Countries with higher public expenditure on disability and sickness cash benefits and family benefits, such as Norway (4.4% of GDP) and Denmark (4.7% of GDP), report more favourable outcomes, including higher happiness scores and lower levels of depression and loneliness among parents. By contrast, the United Kingdom and Germany, which report lower average public expenditure on disability and sickness cash benefits between 2017 and 2021 (1.8% and 1.9% of GDP, respectively), consistently appear among the poorer-performing countries across general health, happiness, loneliness, and depression indicators. Hong Kong, which is not included in the OECD Social Expenditure Database, nonetheless exhibits some of the lowest well-being outcomes in the analysis; existing evidence indicates that public expenditure on disability allowances in Hong Kong accounted for approximately 0.17% of GDP in 2022–2023(Secretariat, 2025). Overall, these findings suggest that while the health and well-being disadvantage associated with parenting CWAL is widespread, its severity is conditioned by national welfare arrangements. Institutional support appears to play a critical role not only in mitigating economic strain but also in reducing the cumulative physical and psychological costs of caregiving.

This study has some limitations. One of them is the definition of "children disability" used. In the GGS data this concept is not further specified, therefore distinguishing the differences in type of disability or detailed type of activity limitations is not possible. Furthermore, some countries, like Sweden, were excluded from the dataset because of the lack of information on the activity's limitations of the children. Cross-country differences also require further investigation. For example, although France stands among countries with low gender inequality, the results of the depression score show that women in France report more depressive symptoms than in other European countries. Another limitation of the study was the lack of data for "Hong Kong". While the respondents in Hong Kong report worse health outcomes among the other twelve countries under study, there is not enough published data about the expenditure on disability or the gender equality index in Hong Kong.

At the same time, this study has key strengths. The dataset allows us to compare families with and without children with activity limitations, examine the health and well-being of both mothers and fathers, and do so within a cross-national comparative framework. This multidimensional comparative framework allows us to distinguish patterns in parental health and well-being that are consistent across countries from those that vary by national context. These findings provide an

important evidence base for future research and policy development concerning an often-overlooked population group. Countries with higher public spending on disability and family benefits tend to have better parental health and well-being. Our findings highlight the health burden of caring for children with activity limitations and the importance of institutional support, while showing that gender inequalities persist across welfare contexts.

REFERENCES

Balbo, N., & Bolano, D. (2024). Child disability as a family issue: a study on mothers' and fathers' health in Italy. *European Journal of Public Health* 34(1), 79-84. https://doi.org/10.1093/eurpub/ckad168.

Balbo, N., & Burciu, R. (2026). The Double Challenges of Single Parents Raising Children with Disabilities. *European Journal of Population* 42, 9. https://doi.org/10.1007/s10680-026-09767-9.

Bixby, L. (2023). Disability is not a burden: the relationship between early childhood disability and maternal health depends on family socioeconomic status. *Journal of Health and Social Behavior* 64(3), 354-369. https://doi.org/10.1177/002214652311675.

Brekke, I., & Alecu, A. (2023). The health of mothers caring for a child with a disability: a longitudinal study. *BMC Women's Health*, 23(1), 639. https://doi.org/10.1186/s12905-023-02798-y.

Chou, K. (2018). Social exclusion in old age: a validation study in Hong Kong. *Aging & Mental Health* 22(8), 1078–1085. https://doi.org/10.1080/13607863.2017.1330870.

Currie, G., & Pozniak, K. (2024). From Mother to Caregiver: Mothering Children with Lifelong Care Needs Across the Life Course. *Demeter Press*: https://doi.org/10.2307/jj.29308404.

De Jong-Gierveld, J., & van Tilburg, T. (2006). A 6-item scale for overall, emotional, and social loneliness: Confirmatory tests on survey data. *Research on Aging* 28(5), 582-598. https://doi.org/10.1177/0164027506289723.

Di Giulio, P., Philipov, D., & Jaschinski, I. (2014). Families with disabled children in different European countries. *Families and Societies*, 23, 1-44.

Eapen, V., Karlov, L., John, J. R., Beneytez, C., Grimes, P., Kang, Y., & ... & Volgyesi-Molnar, M. (2023). Quality of life in parents of autistic children: A transcultural perspective. *Frontiers in psychology* 14, 1022094. https://doi.org/10.3389/fpsyg.2023.1022094.

European Disability Forum. (2020). *EDF recommendations on EU policies on children's rights.* EDF.

Eurostat. (s.d.). *Standardised key social variables: Implementing guidelines.* (2020 edition). Publications Office of the European Union.: 2020.

Gagnon, R., Garst, B., Kouros, C., Schiffrin, H., & Cui, M. (2020). When overparenting is normal parenting: Examining child disability and overparenting in early adolescence. *Journal of Child and Family Studies* 29(2), 413-425. https://doi.org/10.1007/s10826-019-01623-1.

Gauthier, A., Kong, S., Grünwald, O., Bujard, M., Caporali, A., Deimantas, V., & Schumann, A. (2025). The Generations and Gender Survey: a cross-national longitudinal resource. *European Sociological Review* 41(6), 983–1001. https://doi.org/10.1093/esr/jcaf005.

Gauthier, A., Kong, S., Grünwald, O., Bujard, M., Caporali, A., Deimantas, V., . . . Schumann, A. (2023). Data Brief: The Generations and Gender Survey second round (GGS-II). *GGP Technical Paper Series*, https://doi.org/10.5281/zenodo.10220746.

Gauthier, A., Liefbroer, A., Ajzen, I., Aassve, A., Beets, G., Billari, F., & Vikat, A. (2021). *Generations and Gender Survey Baseline Questionnaire 3.1. Netherlands: Interdisciplinary Demographic Institute* [distributor].

Gilson, K., Davis, E., Johnson, S., Gains, J., Reddihough, D., & Williams, K. (2018). Mental health care needs and preferences for mothers of children with a disability. *Child: Care, Health and Development* 44(3), 384-391. https://doi.org/10.1111/cch.12556.

Ha, J., Hong, J., Seltzer, M., & Greenberg, J. (2008). Age and gender differences in the well-being of midlife and aging parents with children with mental health or developmental problems: Report of a national study. *Journal of Health and Social Behavior* 49(3), 301-306. https://doi.org/10.1177/002214650804900305.

Johnson, L., Flynn, S., Thomas, C., & Slayter, E. (2025). Attention to disability in child protection policies across four liberal welfare regimes. *Journal of Public Child Welfare* 19(1), 141-167. https://doi.org/10.1080/15548732.2024.2306165.

Lee, J. (2013). Maternal stress, well-being, and impaired sleep in mothers of children with developmental disabilities: A literature review. *Research in Developmental Disabilities* 34(11), 4255-4273. https://doi.org/10.1016/j.ridd.2013.09.008.

Legislative Council Secretariat. (2025). Financial assistance for persons with disabilities in selected places (Fact Sheet FS01/2025). *Research Office*. https://app7.legco.gov.hk/rpdb/en/uploads/2025/FS/FS01_2025_20250102_en.pdf.

Marquis, S., McGrail, K., & Hayes, M. (2020). Mental health of parents of children with a developmental disability in British Columbia, Canada. *Journal of Epidemiol Community Health* 74(2), 173-178. https://doi.org/10.1136/jech-2018-211698.

OECD. (2024). *Society at a Glance 2024: OECD Social Indicators*. OECD Publishing. https://doi.org/10.1787/918d8db3-en.

Olsson, M., & Hwang, C. (2001). Depression in Mothers and Fathers of Children with Intellectual Disability. Journal of Intellectual Disability Research 45, 535-543. http://doi.org/10.1046/j.1365-2788.2001.00372.x.

Öztürk, M., & Alemdar, D. (2023). The care burden of mothers of children with disability: Association between family quality of life and fatigue. *Journal of Pediatric Nursing* 73, e418-e425. https://doi.org/10.1016/j.pedn.2023.10.010.

Pan, J., Wang, N., & Shum, M. (2025). Mental health of Hong Kong university students: a 5.5-year trend study across the COVID-19 pandemic. *International Journal of Adolescence and Youth* 30(1). https://doi.org/10.1080/02673843.2025.2496445.

Radloff, L. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement* 1, 385–401. https://doi.org/10.1177/014662167700100306.

Reichman, N., Corman, H., & Noonan, K. (2008). Impact of child disability on the family. *Maternal and child health journal* 12(6), 679-683. https://doi.org/10.1007/s10995-007-0307-z.

Roddy, Á. (2022). Income and conversion handicaps: estimating the impact of child chronic illness/disability on family income and the extra cost of child chronic illness/child disability in Ireland using a standard of living approach. *The European Journal of Health Economics* 23(3), 467-483. https://doi.org/10.1007/s10198-021-01371-4.

Sadiki, M. (2023). Parenting a child with disability: A mother's reflection on the significance of social support. *African Journal of Disability* 12, 1157. https://doi.org/10.4102/ajod.v12i0.1157.

Sarman, A., & Tuncay, S. (2024). Problems Experienced by Families of Children with Disabilities and Nursing Approaches. In The Palgrave Encyclopedia of Disability. Cham: *Springer Nature Switzerland* (pp. 1-13). https://doi.org/10.1007/978-3-031-40858-8_69-1.

Shahali, S., Tavousi, M., Sadighi, J., Kermani, R., & Rostami, R. (2024). Health challenges faced by parents of children with disabilities: a scoping review. *BMC Pediatrics* 24(1), 619. https://doi.org/10.1186/s12887-024-05104-3.

Shrout, P., & Yager, T. (1989). Reliability and Validity of Screening Scales: Effect of Reducing Scale Length. *Journal of Clinical Epidemiology* 42(1), 69–78. https://doi.org/10.1016/0895-4356(89)90027-9.

Surkalim, D., Luo, M., Eres, R., Gebel, K., van Buskirk, J., Bauman, A., & Ding, D. (2022). The prevalence of loneliness across 113 countries: systematic review and meta-analysis. *BMJ* 376. https://doi.org/10.1136/bmj-2021-067068.

UNICEF. (2025). *International Disability Alliance & Global Disability Summit Secretariat.* Global Disability Inclusion Report 2025.

United Nations. (2006). Convention on the Rights of Persons with Disabilities and Optional Protocol. *United Nations*.

Vartic, V. (2024). Families of children with disabilities: specific problems and models of support. *Review of Psychopedagogy* 13(1). https://doi.org/10.56663/rop.v13i1.79.

Vrankić Pavon, M., Wagner Jakab, A., & Löw, A. (2024). Exploring relationship satisfaction in mothers of children with disabilities: the predictive role of interparental conflicts and moderating role of dyadic coping. Front. *Psychiatry* 14:1307827. https://doi.org/10.3389/fpsyt.2023.1307827.

World Economic Forum. (2025). *Global gender gap report 2025.* World Economic Forum.

World Health Organization. (2001). International classification of functioning, disability and health: ICF. *World Health Organization*, https://iris.who.int/handle/10665/42407.

Xia, C., Wei, T., Tang, Q., Zheng, H., Chen, G., & Lu, J. (2023). Depression and associated factors among family caregivers of children with disabilities: analysis of intergenerational differences. *In Healthcare* (Vol. 11, No. 19, p. 2693). MDPI. https://doi.org/10.3390/healthcare11192693.

Yarar, F., Akdam, M., Çarpan, İ., Topal, S., Şenol, H., & Tekin, F. (2021). Impact of having a disabled child on mothers' anxiety, depression and quality of life levels. *Pamukkale Medical Journal* 14(1), 223-232. https://doi.org/10.31362/patd.758161.

APPENDIX:

TABLE A1 SRH SCORE AMONG PARENTS

Country	Fathers of CWAL	Fathers of non-CWAL	Mothers of CWAL	Mothers of non-CWAL
Argentina	4.2	4.3	3.9	4.2
Austria	3.9	4.2	3.8	4.2
Germany	3.5	3.8	3.4	3.7
Denmark	3.9	4	3.8	4.1
Estonia	3.8	3.9	3.7	4
Finland	3.7	4	3.8	4
France	3.7	4	3.5	3.9
Hong Kong	3.5	3.7	3.3	3.7
Croatia	4	4.2	3.9	4.1
Netherlands	3.7	4	3.5	3.9
Norway	3.8	4	3.8	4
United Kingdom	3.7	4	3.5	3.9
Uruguay	4	4.1	3.8	4.1
Total	3.8	4	3.7	4

Source:
GGS-II

TABLE A2 LONELINESS SCORE AMONG PARENTS

Country	Fathers of CWAL	Fathers of non-CWAL	Mothers of CWAL	Mothers of non-CWAL
Argentina	2.2	1.7	2.8	2.2
Austria	2	1.6	2.2	1.5
Germany	3.2	2.8	3.4	2.9
Denmark	2.1	1.8	2.1	1.8
Estonia	2.2	1.8	2.1	1.6
Finland	3.1	2.6	3.1	2.4
France	1.8	1.5	2.5	1.9
Hong Kong	4.5	3.7	4	3.3
Croatia	2.7	2.3	3	2.5
Netherlands	2.1	1.4	1.9	1.4
Norway	2.6	2.3	2.5	2.2
United Kingdom	3.2	2.6	3.4	2.6
Uruguay	2.7	2.2	2.7	2.3
Total	2.6	2.2	2.7	2.2

Source:
GGS-II

TABLE A3 LIFE SATISFACTION SCORE AMONG PARENTS

Country	Fathers of CWAL	Fathers of non-CWAL	Mothers of CWAL	Mothers of non-CWAL
Argentina	8.6	8.4	7.8	8.4
Austria	7.8	8.2	7.3	8.1
Germany	6.8	7.3	6.6	7.2
Denmark	8.0	8.1	7.9	8.2
Estonia	7.5	7.8	7.5	7.9
Finland	7.6	8.1	7.8	8.2
France	7.4	7.8	7.1	7.6
Hong Kong	7.0	7.3	6.5	7.4
Croatia	7.7	8.2	7.6	8.0
Netherlands	7.5	8.0	7.4	7.9
Norway	7.1	7.7	7.4	7.6
United Kingdom	6.5	7.3	6.8	7.2
Uruguay	8.1	8.4	8.0	8.3
Total	7.5	7.9	7.3	7.9

Source:
GGS-II

TABLE A4 HAPPINESS SCORE AMONG PARENTS

Country	Fathers of CWAL	Fathers of non-CWAL	Mothers of CWAL	Mothers of non-CWAL
Argentina	8.6	8.4	8.05	8.3
Austria	7.9	8.1	7.4	8.1
Germany	7.2	7.6	7.09	7.6
Denmark	7.7	7.8	7.6	7.9
Estonia	7.6	7.9	7.6	8.02
Finland	7.5	8.07	7.9	8.2
France	7.6	7.9	7.5	7.8
Hong Kong	7.3	7.5	6.7	7.6
Croatia	8.02	8.4	7.8	8.3
Netherlands	7.4	8.06	7.5	7.9
Norway	7.3	7.7	7.3	7.6
United Kingdom	6.7	7.5	6.4	7.1
Uruguay	7.8	8.3	7.9	8.3
Total	7.6	7.9	7.4	7.9

Source:
GGS-II

TABLE A5 DEPRESSION SCORE AMONG PARENTS

Country	Fathers of CWAL	Fathers of non-CWAL	Mothers of CWAL	Mothers of non-CWAL
Argentina	6.9	6.09	8.1	7.1
Austria	7.1	6.5	8.2	7.09
Germany	7.6	7.07	8.4	7.6
Denmark	6.6	6.4	7.4	6.8
Estonia	6.5	6.09	7.2	6.4
Finland	8.08	7.1	8.5	7.3
France	8.1	7.6	9.4	8.7
Hong Kong	9.5	8.1	9.4	8.1
Croatia	7.03	6.6	8.2	7.5
Netherlands	7.3	6.3	7.7	6.8
Norway	6.7	6.7	7.7	7.2
United Kingdom	8.3	7.3	9.1	8.1
Uruguay	7.08	6.5	8.3	7.05
Total	7.4	6.8	8.3	7.4

Source:
GGS-II

TABLE A6 LIFE SATISFACTION SCORE AMONG PARENTS OF CHILDREN UNDER 18

Country	Fathers: children <18 CWAL	Fathers: children <18 non-CWAL	Mothers: children <18 CWAL	Mothers: children <18 non-CWAL
Argentina	8.6	8.4	8	8.4
Austria	7.7	8.1	7.2	8.1
Germany	6.8	7.3	6.7	7.2
Denmark	8	8.1	7.9	8.2
Estonia	7.5	7.8	7.5	7.9
Finland	7.5	8.1	7.8	8.2
France	7.4	7.8	7	7.6
Hong Kong	7.1	7.3	6.3	7.3
Croatia	7.7	8.2	7.6	8
Netherlands	7.3	8	7.4	7.9
Norway	7	7.7	7.3	7.7
United Kingdom	6.7	7.3	6.8	7.2
Uruguay	8.2	8.4	8	8.3
Total	7.5	7.8	7.3	7.8

Source:
GGS-II

TABLE A7 LIFE SATISFACTION SCORE AMONG PARENTS WITH ONE OR MORE CWAL UNDER 18

Country	Fathers: 1 CWAL (u18)	Fathers: +2 CWAL (u18)	Mothers: 1 CWAL (u18)	Mothers: +2 CWAL (u18)
Argentina	8.8	7.0	8.0	7.8
Austria	7.7	7.8	7.2	7.0
Germany	6.8	6.8	6.7	6.5
Denmark	8.0	8.1	7.9	7.8
Estonia	7.5	7.5	7.4	7.6
Finland	7.5	7.4	7.8	7.8
France	7.4	7.8	7.0	6.9
Hong Kong	6.9	7.5	6.1	7.2
Croatia	7.7	7.7	7.5	7.9
Netherlands	7.5	6.4	7.5	6.3
Norway	7.1	6.9	7.2	7.6
United Kingdom	6.8	6.1	7.0	5.6
Uruguay	8.3	7.0	8.0	8.0
Total	7.5	7.2	7.3	7.2

Source:
GGS-II

TABLE A8 DETERMINANTS OF SRH (DICHOTOMIZED)

Predictor	Estimate (β)	Std. Error	Statistic	95% CI
Non-CWAL (Ref.: CWAL)	0.676***	0.0752	8.99	[0.53; 0.82]
Man (Ref.: Woman)	0.250***	0.0688	3.64	[0.12; 0.39]
Age	-0.034***	0.0039	-8.90	[-0.042; -0.027]
Partner (Ref.: No partner)	0.359***	0.1051	3.42	[0.15; 0.57]
Education (Linear trend)	1.343***	0.2216	6.06	[0.91; 1.78]
Intercept	2.010***	0.2442	8.23	[1.53; 2.49]

Source:
GGS-II

Age was negatively associated with self-rated health ($\beta = -0.011$, $p < .001$ in the linear model; $\beta = -0.034$, $p < .001$ in the logistic model), whereas being male ($\beta = 0.074$ vs. $\beta = 0.250$), having a partner ($\beta = 0.143$ vs. $\beta = 0.359$), not having a child with activity limitations ($\beta = 0.227$ vs. $\beta = 0.676$), and higher educational attainment (linear trend: $\beta = 0.418$ vs. $\beta = 1.343$) were positively associated with better self-rated health. The coefficients are not directly comparable in magnitude because the linear model estimates adjusted differences in mean SRH scores, whereas the logistic model estimates change in the log-odds of reporting better health. Nevertheless, the consistent direction and statistical significance of the associations across both model specifications support the robustness of the main findings.

FIGURE A1: GENDER AND CWAL GAPS FOR PARENTS OF CHILDREN UNDER 18 YEARS OLD

Note:
all scores standardized to 0-1
Source:
Author's estimation, based on data from GGS-II

TABLE A9 DETERMINANTS OF DEPRESSION

Predictor	Estimate (β)	Std. Error	Statistic	95% CI
Non-CWAL (Ref.: CWAL)	-0.763***	0.0405	-18.85	[-0.84; -0.68]
Man (Ref.: Woman)	-0.558***	0.0309	-18.04	[-0.62; -0.5]
Age	-0.019***	0.0016	-11.87	[-0.02; -0.02]
Partner (Ref.: No partner)	-1.118***	0.0455	-24.56	[-1.21; -1.03]
Education (Linear trend)	-0.827***	0.1388	-5.96	[-1.1; -0.55]
Intercept	10.169***	0.2163	47.02	[9.75; 10.59]

Source:
GGS-II

Age was significantly negatively associated with depression scores, indicating slightly lower depression scores at older ages. Men reported lower depression scores than women, while partnered respondents reported substantially lower depression scores than those without a partner. Consistent with the findings for SRH, parents without a child with activity limitations (CWAL) had significantly lower depression scores than parents with at least one CWAL. Higher educational attainment was also associated with lower depression scores.

TABLE A10 DETERMINANTS OF LONELINESS

Predictor	Estimate (β)	Std. Error	Statistic	95% CI
Non-CWAL (Ref.: CWAL)	-0.468***	0.0284	-16.5	[-0.52; -0.41]
Man (Ref.: Woman)	0.049*	0.0216	2.29	[0.01; 0.09]
Age	-0.009***	0.0011	-7.89	[-0.01; -0.01]
Partner (Ref.: No partner)	-0.765***	0.0317	-24.15	[-0.83; -0.7]
Education (Linear trend)	-0.491***	0.0948	-5.18	[-0.68; -0.31]
Intercept	3.76***	0.1888	19.92	[3.39; 4.13]

Source:
GGS-II

Age was significantly negatively associated with loneliness scores, although the magnitude of the association was small. Men reported slightly higher loneliness scores than women. Partnership status showed a substantial negative association with loneliness, with partnered respondents reporting lower loneliness scores than those without a partner. Parents without a CWAL also reported significantly lower loneliness scores than parents with at least one CWAL. Higher educational attainment was associated with lower loneliness scores.

TABLE A11 DETERMINANTS OF HAPPINESS

Predictor	Estimate(β)	Std. Error	Statistic	95% CI
Non-CWAL (Ref.: CWAL)	0.305***	0.0222	13.7	[0.26; 0.35]
Man (Ref.: Woman)	-0.018	0.0174	-1.02	[-0.05; 0.02]
Age	0.003**	9.00E-04	2.99	[0; 0]
Partner (Ref.: No partner)	0.79***	0.0252	31.3	[0.74; 0.84]
Education (Linear trend)	0.413***	0.0933	4.43	[0.23; 0.6]
Intercept	6.386***	0.1046	61.03	[6.18; 6.59]

Source:
GGS-II

Age was positively associated with happiness scores, although the magnitude of the association was small. Gender was not significantly associated with happiness. Partnership status showed a substantial positive association, with partnered respondents reporting higher happiness scores than those without a partner. Parents without a CWAL also reported significantly higher happiness scores than parents with at least one CWAL. Higher educational attainment was associated with higher happiness scores. The positive association between age and happiness is directionally consistent with the negative association observed between age and depression scores.

TABLE A12 DETERMINANTS OF LIFE SATISFACTION

Predictor	Estimate (β)	Std. Error	Statistic	95% CI
Non-CWAL (Ref.: CWAL)	0.327***	0.0228	14.37	[0.28; 0.37]
Man (Ref.: Woman)	0.001	0.0178	0.08	[-0.03; 0.04]
Age	0	9.00E-04	0.18	[0; 0]
Partner (Ref.: No partner)	0.749***	0.0262	28.54	[0.7; 0.8]
Education (Linear trend)	0.556***	0.0896	6.21	[0.38; 0.73]
Intercept	6.419***	0.0997	64.37	[6.22; 6.61]

Source:
GGS-II

Age and gender were not significantly associated with life satisfaction. In contrast, partnership status was positively associated with life satisfaction, with partnered respondents reporting higher life satisfaction scores than those without a partner. Parents without a CWAL also reported significantly higher life satisfaction scores than parents with at least one CWAL. Higher educational attainment was positively associated with life satisfaction.

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