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Parenthood and Mental Health: Findings from an English Longitudinal Cohort aged 32

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Abstract

Studying the mental health effects of parenthood is challenging due to unequal selection into parenthood. This study used data from the English longitudinal cohort Next Steps (N = 7,095) to examine the association between parenthood, psychological distress and life satisfaction at age 32, accounting for observable selection effects. A lifecourse perspective offered insights into early life inequalities that influence fertility decisions and parent's life stage, which, in turn, may shape the extent to which parenthood is a determinant of mental health. Results indicate a small positive effect of parenthood on mental health, with males reporting better outcomes than females. Parenthood had a greater impact on improving life satisfaction than reducing psychological distress. In the female sample, ethnic minority parents reported lower psychological distress than White parents, while ethnic differences in mental health were more pronounced among males without children. Sexual minorities reported higher psychological distress, particularly LGBQ female parents. Having a cohabiting partner and dual earnings protected mental health, especially for parents. Older age at first child was also associated with better mental health while a greater number of children was linked to worse mental health for females but not males. Among people without children, fertility intentions influenced mental health—males who did not want children reported the lowest life satisfaction, whereas for females, it was those uncertain about their fertility intentions. This study highlights modest mental health benefits of parenthood while emphasising social inequalities. Future research should explore long-term mental health trajectories and policies that mitigate mental health burdens associated with different fertility choices.

Keywords: parenthood; mental health; longitudinal; lifecourse; psychological distress; life satisfaction; inequalities

Introduction

Between 2019-2020, one in three children in the UK lived with at least one parent experiencing emotional distress and mothers were more likely to report mental health difficulties than fathers (Office for Health Improvements & Disparaitites, 2022). Over the past 5 years, the UK Household Longitudinal Study has seen a steady increase in the proportion of children living with at least one parent reporting emotional distress, indicating a decline in parental mental health over time. The statistics are intentionally constructed from the perspective of the child i.e., the proportion of children affected by poor parental mental health. In doing so, the aim is not to present the prevalence of maternal and paternal mental health difficulties or to compare the mental health of parents with people without children.

The most cited prevalence statistics state that 68% of women and 57% of men with a mental health difficulty are parents (Royal College of Psychiatrists, 2016). Although, by selecting only those with a mental health difficulty and comparing parental status within this group, it is not possible to garner an understanding about the relationship between parental status and mental health among a whole population. Understanding parents' mental health has implications for policy interventions to support those individuals, but also beyond the parents' themselves, including for child outcomes (Nomaguchi & Milkie, 2020). However, studying the mental health effect of parenthood is challenging, not least because selection into parenthood is not equally distributed among the population.

It is increasingly recognised that in addition to family background (e.g., family income, education and composition) (Booth et al., 2008), an individual's mental health may also influence whether and when they become a parent (Laursen & Munk-Olsen, 2010). Studies using longitudinal data are emerging that examine the reciprocal relationship between mental health and parental status (Kalucza et al., 2015; Grundström et al., 2024), but they are limited, with no known evidence from English population-based studies. The current study aimed to fill this gap by providing a state of the nation report on parenthood and mental health at age 32 in England using data from the Next Steps cohort (born 1989-90). Longitudinal data enabled a lifecourse perspective, improving understanding of the extent to which

early life inequalities influence decisions about family formation and parent's life stage, which, in turn, may shape the extent to which parenthood is a determinant of mental health. Based on recent national statistics that showed 50% of women born in 1990 were parents by the age of 30, we might expect just over half of the current sample aged 32 to have children (Office for National Statistics, 2022). This provides the opportunity for the first examination of parenthood and mental health in these data. We acknowledge that many study members who are not yet parents, might plan to be in the future (Pelikh & Goisis, 2024). We also recognise that a focus on child-free individuals, who have voluntarily decided to not have children, is often missed in research (Umberson et al., 2010). For these reasons, we examine the mental health of people without children with different fertility intentions in addition to those people with children.

Parenthood and mental health

Parenting is often described as the most challenging and rewarding job that there is – the great responsibility of raising a child can be stressful but it can also provide clear meaning and purpose. Increasingly though, it is recognised that some parents regret their decision to have a child, with population estimates between 7–16% (Piotrowski et al., 2024). The tension between parenting strain and parental wellbeing has been coined the *demands-rewards perspective* (Nomaguchi & Milkie, 2020). Research findings that compare the mental health of parents with those without children mirror this complexity (Nelson et al., 2014). Early cross-sectional research using data from the United States (US) National Survey of Families and Households showed a mental health disadvantage for parents (Evenson & Simon, 2005). A year later, Helbig et al. (2006) published results from the 1998/99 German Health Survey and revealed a positive association between parenthood and mental health, particularly for fathers. These findings were later replicated using a large Norwegian community sample however, authors described the differences as 'too small to have any public health significance', suggesting that differences were in part explained by relationship status and breakdown (Rimehaug & Wallander, 2010). A modest association between happiness and parenthood has also been evidenced across Europe and the US (Aassve et al., 2012; Nelson et al., 2013). Many of these early cross-sectional studies do not account for the fact that selection into

parenthood is not equally distributed among the population. Consequently, differences in mental health between parents and people without children may instead represent the demographic, socioeconomic and health characteristics of those who selected into parenthood.

A lifecourse perspective

Applying a lifecourse perspective to parental mental health helps to account for inequalities that influence decisions about family formation and parents' life stage, which, in turn, shape their experience (Umberson et al., 2010). For example, the extent to which living with children is a social determinant of health was recently found to be highly dependent on parents' age (Rattay & von der Lippe, 2020). Beyond family background characteristics such as income, education and composition, an individual's mental health may also influence whether and when they become a parent (Laursen & Munk-Olsen, 2010). Few longitudinal studies have explored selection into parenthood by early life mental health status. However, Kalucza et al. (2015) used data from a Swedish cohort study aged between 16-43 to examine the association between adolescent psychological symptoms and the likelihood of becoming a parent. They found that men with poorer mental health at age 16 were less likely to become parents by age 43, indicating a selection into parenthood based on mental health. No such effect was present for women. Furthermore, they found that after controlling for adolescent psychological symptoms, parental status was associated with better mental health for women but not men. Gendered selection effects were recently replicated using the Finnish Stress, Development and Mental Health Cohort (Grundström et al., 2024). This study also investigated the association between adolescent mental health and the timing of the parenthood transition and found that for women, adolescent depressive symptoms were associated with a greater likelihood of becoming a parent before the age of 24. After accounting for these selection effects, being a parent was associated with more positive mental health in mid-adulthood for both men and women.

The mental health benefits of parenthood could be explained by prospect theory, in which individuals who predict that having children will bring them happiness, are

more likely to become parents (Aassve et al., 2015). However, reproductive decisions are complex and the extent to which having a child is a positive prospect will be driven by biological, contextual, personal and socio-cultural considerations (Novoa et al., 2024). The 'biological clock' can motivate the decision to have a child, but genetics, chronic illnesses, and infertility may complicate reproductive decisions or remove the choice completely. Contextual factors such as housing, employment and financial insecurity are often cited as reasons for delaying parenthood or choosing not to have children (Datta et al., 2023), whereas personal reasons related to discrimination, childhood experiences and historical family context are less often noted (Albertini & Brini, 2021). We have seen socio-cultural shifts across generations with women's expectations of educational attainment and personal achievements contributing to reproductive decisions and the prioritisation of leisure time and freedom (Kuipers et al., 2021). There is also an increasing population of both men and women choosing to remain child-free in response to existential crises such as climate change and an epidemic of despair (Platt & Sterling, 2024; Wynes & Nicholas, 2017).

Factors such as discrimination, economic precarity, adverse childhood experiences and environmental concerns that are associated with reproductive decisions are also known contributors of depressive symptoms (Kirkbride et al., 2024). Depressive symptoms may lead to more negative predictions about the demands vs. rewards of parenthood and thus the decision to remain child-free (Cetre et al., 2016). More longitudinal research is therefore needed that firstly examines a selection effect based on early life mental health and then accounts for it in subsequent analyses comparing the mental health of parents and people without children.

Unequal mental health burden of parenthood

Parenting takes place within context and research shows large cross-national variation in the association between parenthood and happiness based on varying types and levels of support provided at the national level e.g., paid parental leave and childcare subsidies (Aassve et al., 2015; Glass et al., 2016). For example, Hansen et al. (2009) observed more positive effects of parenthood on mental health in Nordic countries compared to the US and noted national differences in social

policies for supporting families. The current study offers new evidence from the English context.

Within countries, there is also unequal distribution of parenting demands and resources and support available, with evidence of social gradients (Musick et al., 2016). Rising inequalities and changing parenting ideals give way to increasingly divergent parenting experiences with mothers compared to fathers, marginalised groups and people with greater economic precarity carrying greater parental burden (Nomaguchi & Milkie, 2020). Studies conducted in the UK showed that the Covid-19 pandemic further exaggerated unequal mental health burdens for parents, with women, parents from poorer households, and ethnic minority parents showing greater mental health deterioration (Cheng et al., 2021; Whitaker et al., 2021).

Despite the common mismatch between parents' optimistic expectations of parenthood and the reality of having a first child, happiness trajectories in Britain and Germany indicate an increase in happiness in the years around the birth, followed by declining happiness below pre-child levels (Myrskylä & Margolis, 2014). It is therefore important to compare the mental health of new parents to those with older children. Partnership status also plays an important role in the effect of parenthood on mental health for both men and women (Aassve et al., 2016). Younger age at first child and a higher number of children by age 30 are additional factors associated with increased risk of mental health difficulties across the lifecourse for women (Pearson et al., 2019). The negative association between adolescent childbearing and later mental health was shown to be particularly pronounced for black women in the US (Williams et al., 2015). These studies emphasise the benefits of taking an intersectional, lifecourse perspective to uncover inequalities in parental experiences.

Aims and Research Questions

The current study aimed to examine the relationship between parental status and mental health while controlling for potential selection effects using data from an English longitudinal cohort. Multiple outcomes were included to capture the related but distinct dimensions of the complete mental health state: psychological distress and life satisfaction (World Health Organisation, 2022). Psychological distress encompasses emotional symptoms of depression and anxiety whereas life

satisfaction is a global measure of quality of life and subjective wellbeing. While some overlap exists, the correlates of mental illness and wellbeing are largely distinct, justifying the inclusion of both constructs in research to avoid their conflation (Patalay & Fitzsimons, 2016).

After adjusting for demographic, socioeconomic and health characteristics during adolescence, including possible selection effects based on symptoms of psychological distress, we aimed to answer the following research questions:

1. How does parents' mental health compare to people without children and are there differences between males and females?
2. To what extent are there demographic and socioeconomic inequalities in mental health within the parent group and among people without children?
3. For parents, are there differences in mental health by age when first child was born and number of children?
4. For people without children, are there differences in mental health by different fertility intentions?

Method

Data Source

Next Steps, previously known as the Longitudinal Study of Young People in England, is a cohort study following the lives of individuals born within one year (1989-1990) in England (Fang-Wei Wu et al., 2024). The study was originally funded by the Department for Education with an initial sample of 15,770 cohort members recruited in 2004 and first surveyed at age 14. In 2013, the Centre for Longitudinal Studies at University College London received funding from the UK's Economic and Social Research Council to conduct another survey in 2015/2016 at age 25 and have since surveyed cohort members at age 32 in 2022/2023.

To understand what factors were associated with parental status and timing, demographic, socioeconomic and health characteristics, including psychological distress, were taken from the survey conducted at age 15. For the majority of cohort members, this data collection sweep preceded them having children so could be considered a baseline for mental health difficulties and other possible factors. It was

also the first time the General Health Questionnaire (GHQ-12) was administered to participants, giving a full measure of depressive symptoms prior to having children.

Analytical Sample

The analytical sample (N = 7,095) included those who were alive, residing in England and who took part in the age 32 data collection sweep minus those who became parents prior to age 15 (N = 1). Stratified models were restricted to cohort members with available information on their sex from the first three sweeps of data (males N = 3,012, females N = 3,952).

Measures

Parental status and fertility intentions

Parents in the current study were defined as cohort members with biological, adopted, foster or stepchildren or any other children that they considered themselves a parent or guardian of. Both parents with children living in the household (aged 0-15) and non-custodial parents with non-residential biological children were included. Those whose biological children had died were included in the parent sample, however, cohort members currently expecting their first baby were not. For parents who had at least one biological child, age when first child was born was calculated. Number of children was also generated including both biological and non-biological children. For those without children, one item was used to determine fertility intentions: 'Which of these statements best describes the way you feel about having children?'. The following response options were provided: "*I would definitely like children, but I'm not currently trying*", "*I would definitely like children, and I'm currently trying*", "*I might like children in the future, I'm not sure yet*", "*I would definitely not like children",* "*I don't know*" and "*Prefer not to say*". Those who preferred not to say were treated as having missing data and those who answered, "*I don't know*" were combined with "*I might like children in the future, I'm not sure yet*".

Mental health

Mental health outcomes were standardised using z-scores to enable comparisons between psychological distress and life satisfaction.

Psychological distress - General Health Questionnaire (GHQ-12)

(Goldberg et al., 1997)

The short-form of the General Health Questionnaire (GHQ-12) was used to capture psychological distress in the current study. The instrument is frequently adopted as a screening tool for psychological distress in the general population and non-clinical settings and it has been validated for use with both adolescent and adult samples (Werneke et al., 2000). Participants are presented with 12 statements including 'Have you lost sleep over worry', 'Have you been constantly under strain' and 'have you been unhappy or depressed'. They are asked to indicate how often they have experienced psychological and psychosomatic symptoms over the past few weeks using a four-point scale: "*not at all*" "*no more than usual*" "*rather more than usual*" or "*much more than usual*". The Likert scale scoring method was used (0-1-2-3) with scores ranging between 0-36. Positively phrased questions (items 1, 3, 4, 7, and 12) were reverse coded so that a higher score indicated more psychological distress.

Life satisfaction

Life satisfaction was assessed using one item 'Overall, how satisfied are you with your life nowadays?' scores ranged between 0-10 with higher scores indicating more satisfaction with life.

Demographic, socioeconomic and health characteristics

Sex and ethnicity data were from the first available sweeps (up to sweeps 3 and 4). To ensure that demographic, socioeconomic and health characteristics represented a baseline prior to having children, all other variables were taken from the age 15 survey. Other demographic information included age of main parent and single parent household. Socioeconomic characteristics included family education level (highest qualification in the family), housing tenure (homeownership) and occupational social class (managerial, professional and intermediate occupations vs. routine occupations and long term unemployment). The quality of the young person's health in the last 12 months and disability status were also included in addition to psychological distress measured using the GHQ-12. See Supplementary Table S1. for weighted descriptive statistics for age 15 characteristics.

To investigate inequalities in mental health within the parent group and people without children, demographic and socioeconomic characteristics including ethnicity, sexual orientation, cohabiting partnership, combined labour market status, education level and self-reported financial difficulties were examined at age 32. Partnership status was based on reporting a cohabiting partner, regardless of whether that partner was the child(ren)'s biological parent. A derived variable was used to determine the combined labour market status of the study member as an indicator of household employment status and earnings (e.g., single or dual earnings). This accounted for partnership status whereby it was possible to code "*both employed*" (where a partner was present), *"one person employed"* (either the study member or their partner, or the study member only when no partner was present) and "*neither person employed*" (either the study member and their partner were unemployed, or only the study member when no partner was present). Education level was recoded to indicate whether a study member was educated at degree level or above. Finally, self-reported financial difficulties were based on one item 'How well would you say you are managing financially these days? with responses recoded into those who were "*Living comfortably, doing alright*" and "*Just about getting by, finding it quite/very difficult*".

Analytical Strategy

Prior to the main models, selection effects based on adolescent psychological distress were examined. A modified Poisson regression model was conducted adjusting for age 15 demographic, socioeconomic and health characteristics to investigate the association between adolescent psychological distress and parental status by age 32. The advantage of this approach over a logistic regression is that, when adjusting for covariates, it improves precision and directly estimates the relative risk (e.g., risk ratio) instead of calculating the odds ratio (Zou & Donner, 2013). The association between adolescent psychological distress and the timing of first biological child born was tested using a linear multivariable regression model adjusting for all other age 15 covariates.

To answer the main research questions, linear multivariable regression models were run with standardised psychological distress and life satisfaction as the outcomes. All

models were conducted unadjusted and then adjusted for demographic, socioeconomic and health characteristics at age 15. As a sensitivity check, models were also run further adjusting for characteristics at age 32. All models were stratified by sex to explore differences in associations between males and females. A gender variable was available at age 32, however, the decision was taken to stratify using the more complete information on sex from the first three data collection sweeps. While we refer to literature on gendered patterns in parental mental health, we can only make inferences about sex differences with the knowledge that, by age 32, sex ay have changed for some cohort members, and they may identify as a different gender.

Missing data strategy

Non-response is common and expected in longitudinal research but can introduce biases and reduce efficiency. Previous research has identified groups more likely to discontinue participation in Next Steps (e.g., males and those without internet access at home) improving the plausibility of the missing at random assumption (Silverwood et al., 2024). We therefore accounted for non-response bias in all analyses by applying inverse probability weights. This ensured that data from these groups was given more weight in the analyses, improving the sample representativeness of the target population i.e., adults aged 32 years, alive and living in England. For partially observed data, multiple imputation using chained equations was conducted using known auxiliary variables i.e., variables known to predict missingness which therefore help estimate imputed values, and all study variables (Silverwood et al., 2024). See Supplementary Table S2. for a breakdown of missing cases.

Results

Weighted sample characteristics at age 32 including demographic and socioeconomic characteristics, parental status and mental health outcomes can be found in Supplementary Table S3. The sample demographics were broadly representative of the English population in terms of ethnicity (85% White) and sexual orientation (91% heterosexual/straight) based on the 2021 Census (Office for National Statistics, 2025). Education levels were also comparable with the national

average (37% degree level educated) (Office for National Statistics, 2023). Just over half of the sample were parents (54%). The average age of study members when their first child was born was 28 and the mean number of children was 1.43.

Prior to running the main models, selection effects based on symptoms of psychological distress during adolescence were tested, adjusting for demographic, socioeconomic and other health characteristics at age 15 (see Supplementary Tables S4. and S5. for these results). Psychological distress was associated with a reduced likelihood of becoming a parent by age 32, indicating a small selection effect related to adolescent mental health. For males only, every one unit increase in psychological distress, reduced the likelihood of being a parent at age 32 by approximately 3%. This association was not present for females. In the parent only sample, cohort member's age at first birth i.e., the timing of their parenthood transition, was associated with adolescent psychological distress in the unadjusted model such that higher psychological distress was associated with a younger transition to parenthood. However, after adjusting for all other demographic, socioeconomic and health characteristics at age 15, this association was no longer present. By adjusting for demographic, socioeconomic and health characteristics at age 15 in all subsequent models, we account for observable selection effects.

Overall, females reported more psychological distress than males but also slightly higher life satisfaction. Sexual minorities reported higher psychological distress and lower life satisfaction when compared to heterosexual cohort members. The group reporting other ethnicity reported the worst mental health overall, while those with mixed ethnicity, Indian, Pakistani and Bangladeshi and Black African or Black Caribbean participants reported lower psychological distress than White participants. Considerably higher psychological distress and lower life satisfaction was reported by cohort members without a cohabiting partner. Unemployment, lower educational attainment and self-reported financial difficulties were all associated with higher reported psychological distress and lower life satisfaction. Parents showed slightly better mental health overall and, for those without children, people reporting that they never want to have children showed higher psychological distress and lower life satisfaction than people open to or actively trying to have children. Supplementary Table S6. presents the full set of unadjusted weighted means for psychological

distress and life satisfaction by demographic and socioeconomic characteristics at age 32.

How does parents' mental health compare to people without children and are there differences between males and females?

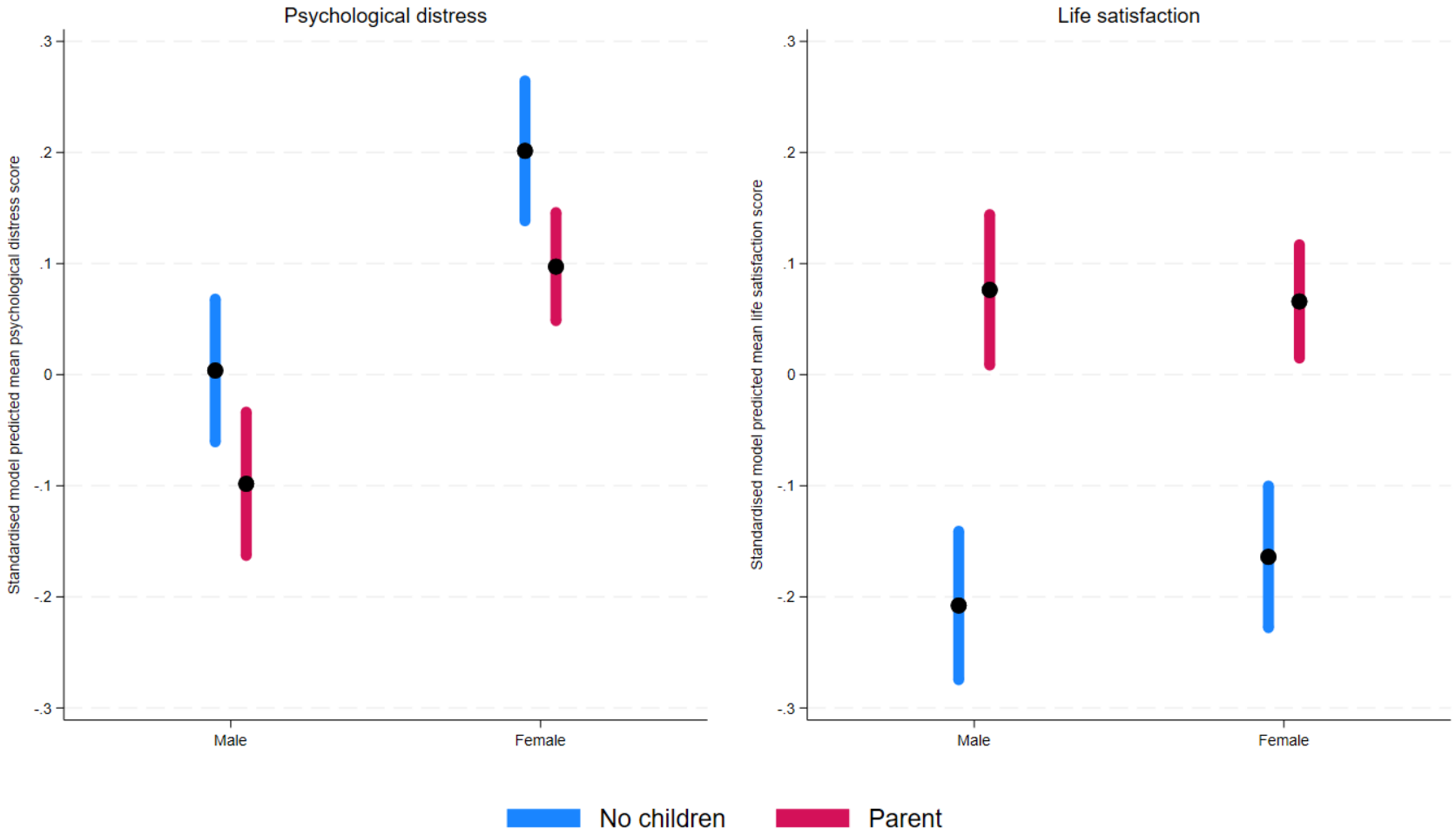
Table 1. presents results from the unadjusted and adjusted models for the association between parental status and psychological distress and life satisfaction. After adjusting for demographic, socioeconomic and health characteristics at age 15, being a parent was associated with fewer symptoms of psychological distress and higher life satisfaction for both males and females when compared to those without children. Results therefore indicate a small positive effect of parenthood on the mental health of adults at age 32. Standardised effects indicate that parenthood plays more of a role in improving life satisfaction than reducing psychological distress. The adjusted model predicted means for males and females are visualised in Figure 1. and demonstrate that while parents of both sexes report fewer symptoms of psychological distress and higher life satisfaction than people without children, male parents generally have a mental health advantage given overall better mental health for males compared to females. Females without children do however show slightly higher life satisfaction than their male counterparts. Further adjusting for age 32 characteristics did not significantly change the results.

Table 1. Unadjusted and adjusted regression models to examine the association between parental status and psychological distress and life satisfaction (full sample N = 7,095, males N = 3,012, females N =3,952)

	Coeff [95% CI]					
	Psychological distress			Life satisfaction		
	Full sample	Males	Females	Full sample	Males	Females
Parental status (if parent)						
Unadjusted	-0.05 [-0.11 – 0.01]	-0.11** [-0.20 - -0.02]	-0.05 [-0.13 – 0.03]	0.23*** [0.16 – 0.29]	0.27*** [0.17 – 0.37]	0.17*** [0.09 – 0.25]
Adjusted for demographic, socioeconomic and health characteristics at age 15	-0.10*** [-0.16 - -0.04]	-0.10** [-0.19 - -0.01]	-0.10** [-0.18 - -0.02]	0.26*** [0.20 – 0.32]	0.28*** [0.19 – 0.38]	0.23*** [0.15 – 0.31]
Adjusted for demographic, socioeconomic and health characteristics at ages 15 and 32	-0.09*** [-0.15 - -0.02]	-0.06 [-0.15 – 0.03]	-0.11** [-0.19 - -0.02]	0.17*** [0.11 – 0.23]	0.15*** [0.06 – 0.24]	0.17*** [0.09 – 0.25]

Note: ****p<.01 **p<.05. The male and female samples do not total the full parent sample (N = 131 missing).*

Figure 1. Standardised and adjusted (age 15 characteristics only) model predicted psychological distress (left) and life satisfaction (right) mean scores for parents and people without children for males (N = 3,012) and females (N =3,952)



To what extent are there demographic and socioeconomic inequalities in mental health within the parent group and amongst people without children?

Weighted mean psychological distress and life satisfaction scores by sex and demographic and socioeconomic characteristics at age 32 can be found in Supplementary Table S7. The results below are based on models adjusting for age 15 demographic, socioeconomic and health characteristics. In most cases, further adjusting for age 32 characteristics did not significantly change conclusions. Where differences were observed, a summary is provided. Unadjusted and adjusted model results are presented in Supplementary Table S8. and margins plots presenting demographic and socioeconomic inequalities using model predicted mean psychological distress and life satisfaction scores can be found in Supplementary Figures S1. and S2.

Ethnicity

Ethnic inequalities in psychological distress varied by parental status. Among male parents, ethnicity was not associated with psychological distress. In contrast, Indian, Pakistani, Bangladeshi, and Black African or Caribbean female parents showed fewer symptoms of psychological distress than White female parents. The same pattern was observed among females without children, while Black African or Caribbean males without children also reported fewer symptoms than their White counterparts. When further adjusting for age 32 characteristics, female parents with mixed ethnicity also showed fewer symptoms of psychological distress than White female parents. Ethnicity was not associated with life satisfaction in the parent group or for females without children. However, Black African or Caribbean males without children showed higher life satisfaction when compared to White males without children. Ethnic differences in psychological distress and life satisfaction among male parents were smaller than among males with no children. We did not observe this pattern for females.

Sexual orientation

Sexual minority inequalities in psychological distress persist regardless of parenthood. Female parents who identified as LGBQ reported higher psychological distress than their heterosexual counterparts, with a similar trend approaching

significance for males. Sexual minority males without children also experienced higher distress while this association was approaching significance for the sexual minority females without children and completely disappeared when additionally controlling for age 32 characteristics in the model. Parenthood appears to slightly amplify sexual minority inequalities in psychological distress for females. However, small LGBQ parent sample sizes, especially for males (N = 29), resulted in large confidence intervals. Sexual minority status was not associated with life satisfaction in the male parent sample or among people without children after adjusting for age 15 characteristics. However, LGBQ female parents reported lower life satisfaction than their heterosexual counterparts.

Cohabiting partner

Having a cohabiting partner appears to be more protective for parents' mental health than for those without children. However, in both groups, males and females without a cohabiting partner reported higher psychological distress. In models further adjusting for age 32 characteristics, having a cohabiting partner was not associated with psychological distress. This is likely due to overlap between having a cohabiting partner and other age 32 characteristics such as combined labour market status. Not having a cohabiting partner reduced life satisfaction for both parents and people without children with a stronger association observed in the parent group, especially among males.

Combined labour market status

Dual earnings were linked to lower psychological distress, regardless of parental status. Parents and people without children alike reported more distress when only one or neither person was employed, with a slightly stronger association for parents. In models further adjusting for age 32 characteristics, there was no longer significantly higher psychological distress among people without children with single earnings compared with those with combined earnings. All other models adjusting for characteristics at age 32, including having a cohabiting partner, showed consistent results. Similarly, having dual earnings was associated with higher life satisfaction in all groups when compared to those with only one or neither person employed. In models further adjusting for age 32 characteristics, there was no longer significantly lower life satisfaction with single earnings compared with those with dual earnings.

Education level

Having a degree was associated with fewer symptoms of psychological distress across all groups, though it was slightly less protective for female parents than for male parents. Those with a degree had higher life satisfaction when compared to those with below degree level education. Although having a degree improved life satisfaction for all, the strongest association was seen in the male parent group. In models further adjusting for age 32 characteristics, all associations disappeared.

Self-reported financial difficulties

Experiencing financial difficulties was consistently associated with higher psychological distress and lower life satisfaction across all groups, with no significant differences between parents and people without children.

For parents, are there differences in mental health by age when first child was born and number of children?

Table 2. presents the results from the unadjusted and adjusted models examining the association between age when first child was born and number of children and psychological distress and life satisfaction. After adjusting for age 15 demographic, socioeconomic and health characteristics, parents' age when first biological child was born was negatively associated with psychological distress such that older age was associated with reduced psychological distress for male and female parents. A similar trend was observed for life satisfaction, with older age when first child was born associated with higher life satisfaction.

No association between number of children and mental health was observed for males. However, a greater number of children was associated with higher psychological distress and lower life satisfaction for female parents after controlling for age 15 demographic, socioeconomic and health characteristics. See Supplementary Figure S3. for margins plots presenting adjusted model predicted psychological distress and life satisfaction mean scores for parents by number of children. The figure presents results using a newly generated variable for number of children that collapses responses given small numbers of cohort members with five or more children (1, 2 ,3 or 4+ children).

Table 2. Unadjusted and adjusted regression models to examine the association between parents' age when first biological child was born and number of children and psychological distress and life satisfaction

	Coeff [95% CI]					
	Psychological distress			Life satisfaction		
	Full sample	Males	Females	Full sample	Males	Females
Age when first biological child was born (N = 3,496)						
Unadjusted	-0.04*** [-0.05 - -0.03]	-0.04*** [-0.06 - -0.02]	-0.04*** [-0.05 - -0.03]	0.05*** [0.04 – 0.06]	0.05*** [0.03 – 0.07]	0.04*** [0.03 – 0.06]
Adjusted for demographic, socioeconomic and health characteristics at age 15	-0.03*** [-0.04 - -0.02]	-0.04*** [-0.05 - -0.02]	-0.03*** [-0.04 - -0.02]	0.04*** [0.03 – 0.05]	0.05*** [0.03 – 0.06]	0.03*** [0.02 – 0.05]
Adjusted for demographic, socioeconomic and health characteristics at ages 15 and 32	-0.01*** [-0.02 - -0.00]	-0.01 [-0.03 – 0.00]	-0.01** [-0.03 - -0.00]	0.02*** [0.01 – 0.03]	0.02*** [0.01 – 0.04]	0.01 [-0.00 – 0.02]
Number of children (N = 3,592)						
Unadjusted	0.10*** [0.05 – 0.14]	0.04 [-0.05 – 0.13]	0.11*** [0.06 – 0.17]	-0.05** [-0.10 - -0.00]	0.01 [-0.08 – 0.10]	-0.09*** [-0.14 - -0.03]
Adjusted for demographic, socioeconomic and health characteristics at age 15	0.07*** [0.02 – 0.11]	0.03 [-0.05 – 0.12]	0.08*** [0.03 – 0.13]	-0.03 [-0.07 – 0.02]	0.02 [-0.07 – 0.11]	-0.05** [-0.11 - -0.00]
Adjusted for demographic, socioeconomic and health characteristics at ages 15 and 32	0.01 [-0.03 – 0.06]	-0.03 [-0.11 – 0.05]	0.04 [-0.01 – 0.09]	0.01 [-0.03 – 0.06]	0.07 [-0.01 – 0.15]	-0.02 [-0.07 – 0.03]

Note: ****p<.01 **p<.05. For models examining age when first biological child was born, the sample includes only those who have biological children (N = 3,496), N = 96 dropped who did not have any biological children or who had missing data. The male (N = 1,253) and female (N = 2,185) samples do not total the full parent sample who have biological children (N = 58 missing). For models examining number of children, the sample includes all parents (N = 3,592). The male (N = 1,293) and female (N = 2,240) samples do not total the full parent sample (N = 131 missing). Age when first biological child was born ranged from 16-34 and number of children from 1-10.*

For people without children, are there differences in mental health by different fertility intentions?

Table 3. presents the results from the unadjusted and adjusted models examining the association between fertility intentions and psychological distress and life satisfaction and Figure 2. presents the standardised and adjusted model predicted psychological distress (left) and life satisfaction (right) mean scores by fertility intentions in the group without children. After adjusting for age 15 demographic, socioeconomic and health characteristics, the association between fertility intentions and psychological distress was not significant. However, model predicted means showed a pattern in which both males and females currently trying to have a child had the lowest psychological distress. For males, those who definitely did not want to have children had the highest psychological distress whereas for females it was those who were unsure about their fertility intentions.

Fertility intentions were associated with life satisfaction such that for both males and females, people currently trying to have a child reported the highest levels of life satisfaction. For males, those who reported definitely not wanting to have children reported lower life satisfaction when compared with people who would definitely like to have children but were not currently trying. This result held in the models further adjusting for age 32 characteristics. For females, those who definitely did not want to have children showed similar levels of life satisfaction to females who wanted to have children but were not currently trying, with lower levels of life satisfaction observed for females unsure about their fertility intentions. This indicates that having decided about fertility intentions improves females' life satisfaction and that for those actively trying to fulfil their goal of having a child, there is a mental health advantage. In the models further adjusting for age 32 characteristics, all significant associations between fertility intentions and life satisfaction disappeared in the female sample.

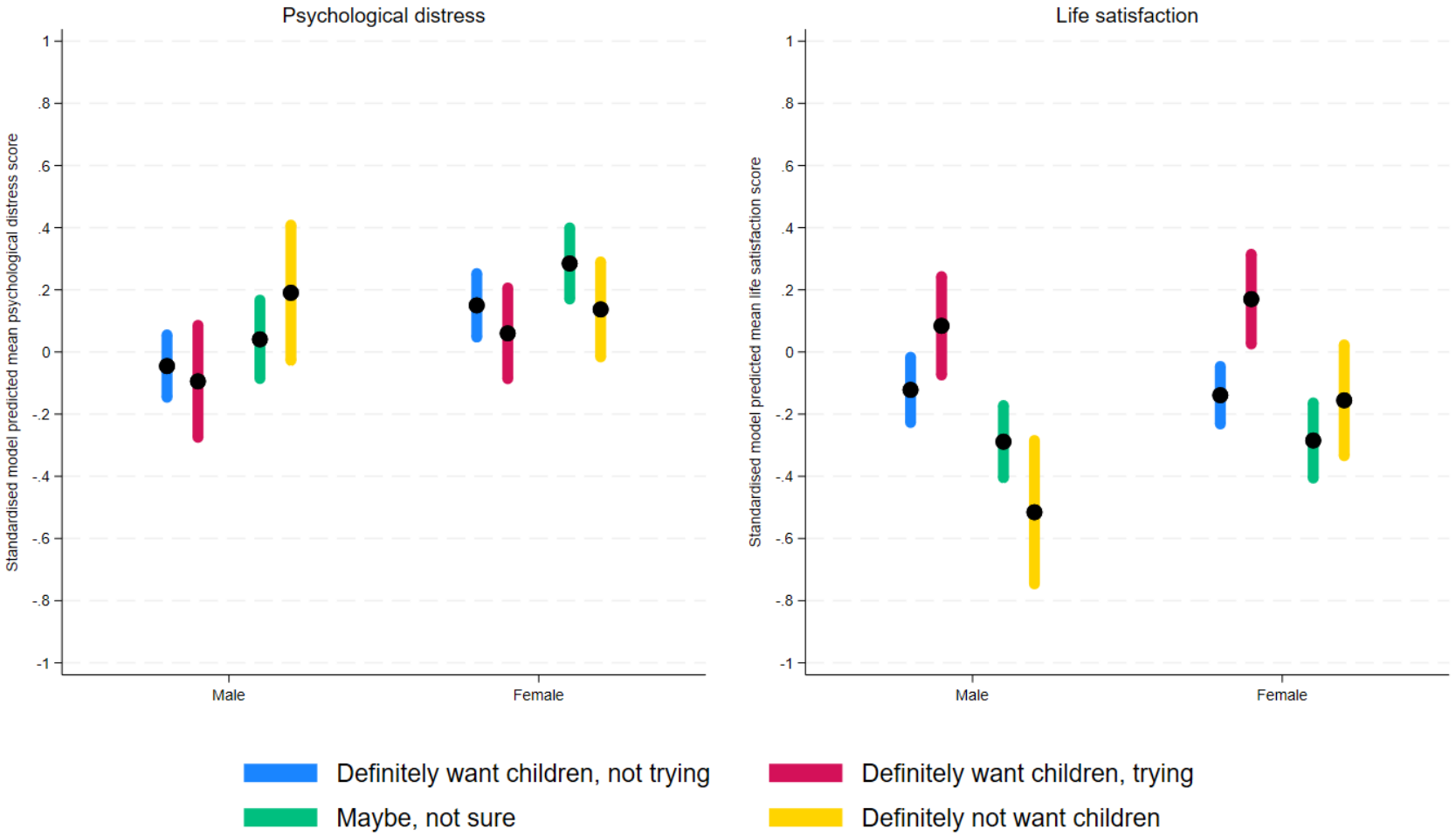
Table 3. Unadjusted and adjusted regression models examining the association between the fertility intentions of people without children and psychological distress and life satisfaction (N = 3,503, males N = 1,719, females N = 1,712)

	Coeff [95% CI]					
	Psychological distress			Life satisfaction		
Fertility intentions	Full sample	Males	Females	Full sample	Males	Females
Unadjusted						
Definitely would like children, not trying (ref)						
Definitely would like children, trying	-0.06 [-0.20 – 0.09]	-0.05 [-0.28 – 0.17]	-0.09 [-0.29 – 0.11]	0.26*** [0.13 – 0.40]	0.21** [0.01 – 0.41]	0.32*** [0.14 – 0.50]
Maybe, not sure	0.12 [-0.00 – 0.25]	0.10 [-0.08 – 0.28]	0.16** [0.00 – 0.32]	-0.16*** [-0.27 - -0.05]	-0.17** [-0.34 - -0.00]	-0.16 [-0.31 – 0.00]
Definitely would not like children	0.20** [0.03 – 0.38]	0.31** [0.03 – 0.58]	0.04 [-0.14 – 0.23]	-0.28*** [-0.45 - -0.10]	-0.45*** [-0.73 - -0.18]	-0.04 [-0.26 – 0.17]
Adjusted for demographic, socioeconomic and health characteristics at age 15						
Definitely would like children, not trying (ref)						
Definitely would like children, trying	-0.06 [-0.20 – 0.08]	-0.05 [-0.26 – 0.16]	-0.09 [-0.27 – 0.09]	0.25*** [0.12 – 0.38]	0.21** [0.01 – 0.40]	0.31*** [0.14 – 0.48]
Maybe, not sure	0.10 [-0.02 – 0.22]	0.09 [-0.08 – 0.26]	0.13 [-0.02 – 0.29]	-0.16*** [-0.27 - -0.05]	-0.17** [-0.33 - -0.00]	-0.15 [-0.30 – 0.01]
Definitely would not like children	0.14 [-0.03 – 0.31]	0.24 [-0.02 – 0.49]	-0.01 [-0.20 – 0.18]	-0.24*** [-0.41 - -0.07]	-0.39*** [-0.66 - -0.13]	-0.02 [-0.22 – 0.19]
Adjusted for demographic, socioeconomic and health characteristics at ages 15 and 32						
Definitely would like children, not trying (ref)						
Definitely would like children, trying	0.03 [-0.10 – 0.16]	0.03 [-0.17 – 0.24]	0.00 [-0.16 – 0.17]	0.07 [-0.05 – 0.19]	0.01 [-0.17 – 0.19]	0.14 [-0.02 – 0.29]

	Coeff [95% CI]					
	Psychological distress			Life satisfaction		
Fertility intentions	Full sample	Males	Females	Full sample	Males	Females
Maybe, not sure	0.06 [-0.05 – 0.18]	0.04 [-0.12 – 0.21]	0.12 [-0.03 – 0.26]	-0.11** [-0.21 - -0.01]	-0.12 [-0.27 – 0.03]	-0.12 [-0.25 – 0.02]
Definitely would not like children	0.06 [-0.10 – 0.22]	0.14 [-0.10 – 0.38]	-0.06 [-0.24 – 0.12]	-0.19** [-0.35 - -0.04]	-0.34*** [-0.57 - -0.11]	0.01 [-0.18 – 0.21]

Note: ****p<.01 **p<.05. The male and female samples do not total the full parent sample (N = 72 missing)*

Figure 2. Standardised and adjusted (age 15 characteristics only) model predicted psychological distress (left) and life satisfaction (right) mean scores by fertility intentions amongst people without children (N = 3,503, males N = 1,719, females N = 1,712)



Discussion

This study provides a state of the nation report on parenthood and mental health among a representative English cohort age 32. It was the first examination of parenthood and mental health in these data, with parents making up over half of the sample. Using longitudinal data and applying a lifecourse approach enabled the adjustment for observable selection effects, specifically, accounting for the possible reciprocal relationship between mental health and parent status. By controlling for demographic, socioeconomic and health characteristics during adolescence, including symptoms of psychological distress, our analyses offer new insights into the mental health differences between parents and people without children. Furthermore, we explored demographic and socioeconomic inequalities within these groups and provide novel findings relating to fertility intentions and mental health among people without children.

Parenthood and mental health: small but positive effects

In line with emerging research on the reciprocal relationship between mental health and parent status, the current study replicates gendered selection effects such that men with poorer mental health during adolescence are less likely to become parents in early to mid-adulthood (Kalucza et al., 2015; Grundström et al., 2024). Our main finding also indicates that, after adjusting for early-life demographic, socioeconomic and health characteristics, parenthood has a modest positive effect on mental health, with fewer symptoms of psychological distress and higher life satisfaction (Aassve et al., 2012; Nelson et al., 2013). Standardised effects indicate that parenthood plays a greater role in improving life satisfaction than reducing psychological distress. This finding emphasises the importance of capturing the related but distinct dimensions of the complete mental health state (World Health Organisation, 2022) and avoiding the conflation of mental illness and wellbeing (Patalay & Fitzsimons, 2016). It also provides support for the *demands-rewards perspective* of parenthood (Nomaguchi & Milkie, 2020) with global improvements in quality of life and subjective wellbeing fostered by increased meaning and purpose despite potential increases in stress due to the demands of parenting.

Our findings are presented within the context of higher psychological distress among females. While parents of both sexes reported fewer symptoms of psychological distress and higher life satisfaction than people without children, male parents generally showed an advantage given overall better mental health for males compared to females. Although somewhat supportive of the unequal mental health burden of parenthood for females (Nomaguchi & Milkie, 2020), we instead conclude a more global female mental health penalty in this cohort.

Demographic and socioeconomic inequalities

Significant demographic and socioeconomic inequalities in mental health were observed within both the parent group and among people without children. Ethnic minority female parents, specifically those with Indian, Pakistani, Bangladeshi and Black African or Caribbean ethnicities, reported lower psychological distress than White female parents. This finding contrasts recent research that suggests a mental health disadvantage among ethnic minorities (Kirkbride et al., 2024) and prior research indicating greater parental burden for marginalised groups (Nomaguchi & Milkie, 2020; Cheng et al., 2021; Whitaker et al., 2021). However, ethnic differences in mental health were more pronounced among males without children. Black African or Caribbean males without children reported fewer symptoms of psychological distress and higher life satisfaction than their White counterparts. This mental health advantage was not observed among male parents, perhaps suggesting greater parental burden for ethnic minority male parents.

Sexual minorities reported higher psychological distress across all groups, confirming persistent mental health disparities for LGBQ individuals (Pitman et al., 2021). In the current study, these disparities were more pronounced for LGBQ female parents, suggesting that parenthood may amplify sexual minority stress among this sub-group (Nomaguchi & Milkie, 2020). This finding underscores the need for targeted mental health interventions and policies supporting LGBQ parents.

Having a cohabiting partner and being in a dual-earning household consistently protected against psychological distress and were associated with higher life satisfaction. Taken together, we provide further evidence for the mental health benefits of relationship stability and financial security (Musick et al., 2016). These

protective effects were stronger among parents, suggesting that social and economic resources play a more pronounced role in buffering the mental health challenges associated with raising children. Results support prior research highlighting the importance of partnership status in the effect of parenthood on mental health for both men and women (Aassve et al., 2016). Findings also align with research that observes greater parental burden among those experiencing economic precarity (Nomaguchi & Milkie, 2020; Cheng et al., 2021; Whitaker et al., 2021).

In models further adjusting for other age 32 characteristics, having a cohabiting partner was no longer associated with psychological distress. This is likely due to overlap between having a cohabiting partner and combined labour market status. Interestingly, results mostly held for combined labour market status when adjusting for other characteristics, which might indicate that having a cohabiting partner is protective for mental health, in large part, due to the combined earnings. Previous research suggests that fathers happiness is compromised by financial strain (Pollmann-Schult, 2014). We might therefore have expected stronger associations between self-reported financial difficulties and worse mental health for male parents in the current study. However, financial difficulties were universally detrimental for mental health, with large effects across all groups.

Being educated to degree level or above was associated with fewer symptoms of psychological distress and higher life satisfaction across all groups, though it was slightly less protective for female than male parents. In a previous study, less educated mothers were more likely to report greater meaning in life associated with parenthood when compared to mothers with college degrees (Nomaguchi & Brown, 2011). While a better education provides greater financial security which, in turn, reduces parenting strain, female parents with successful careers are more likely to experience *role captivity* (Pearlin, 1989). The feeling of being trapped in the parenting role and a sense of isolation in which parenting limits participation in the adult world.

Timing of parenthood and number of children

The age at which individuals became parents was associated with mental health outcomes in the current study. Older age at first biological child was linked to lower

psychological distress and higher life satisfaction, consistent with prior research suggesting that delayed parenthood allows for greater psychological and financial preparedness (Myrskylä & Margolis, 2014). A greater number of children was linked to worse mental health for females but not males. Females with more children reported significantly higher psychological distress and lower life satisfaction, reinforcing the notion that the mental health burdens of parenthood disproportionately affect mothers (Nomaguchi & Milkie, 2020). This aligns with research suggesting mothers' happiness is compromised due to the time demands of parenting, with women still carrying more responsibilities than men (Pollmann-Schult, 2014).

Fertility intentions and mental health among people without children

Among people without children, fertility intentions were associated with life satisfaction such that for both males and females, people currently trying to have a child reported the highest levels of life satisfaction. We conclude that for those actively trying to fulfil their goal of having a child, there is, on average, a mental health advantage. There will, of course, be heterogeneity within this group, given that some individuals will be experiencing fertility problems while trying to conceive and others may have experienced pregnancy loss.

Males who definitively did not want children reported the highest levels of psychological distress and the lowest life satisfaction which could mirror selection effects based on adolescent mental health. This could also reflect a social stigma associated with deviating from the social norms around family formation for men. However, these males may be influenced by other unobserved factors associated with both reproductive decisions and depressive symptoms e.g., discrimination, adverse childhood experiences and environmental concerns (Kirkbride et al., 2024). For females, those who were uncertain about their fertility intentions reported lower life satisfaction compared to those who either wanted children or definitely did not. This may be indicative of the psychological toll of ambiguity surrounding future parenthood and reflects the increasing tensions for women between starting a family, educational attainment, personal achievements and freedom (Kuipers et al. 2021).

Strengths, limitations and future directions

This study provides novel evidence on parenthood and mental health using a nationally representative English cohort. A key strength is the use of longitudinal data to account for observable selection effects, accounting for the reciprocal relationship between mental health and parental status. The inclusion of multiple mental health indicators (psychological distress and life satisfaction) allows for a more nuanced understanding of the complex relationship between parenthood and mental health. Furthermore, stratification by sex and consideration of demographic and socioeconomic factors highlights persisting inequalities among parents and people without children, with implications for targeted policies. Child-free individuals, who have voluntarily decided not to have children, are often missed in research (Umberson et al., 2010). We provide novel evidence on fertility intentions and mental health among people without children, including those who are child-free by choice.

However, the current study has several limitations that must be acknowledged. First, while we adjusted for a range of adolescent demographic, socioeconomic and health characteristics, unmeasured confounding variables (e.g., discrimination and adverse childhood experiences, environmental concerns, personality traits and social support networks) may still bias our estimates. Second, the relatively small number of LGBQ parents in our sample limits the precision of our estimates for this subgroup. Given the demographic and socioeconomic inequalities observed in the current study, future research should investigate how policy interventions (e.g., parental leave, childcare subsidies) might buffer the mental health costs of parenthood for socioeconomically disadvantaged and marginalised groups.

While we provide unique findings relating to fertility intentions and mental health among people without children, we acknowledge that at age 32, this cohort are still very much within their reproductive window. Research suggests an increase in life satisfaction in the years leading up to becoming a parent (Baetschmann et al., 2016), as is indicated by our findings relating to those currently trying to have a child. By including those currently trying to have a child in the ‘control’ group, it could have biased our estimates. Future research should therefore explore the longitudinal mental health trajectories of individuals who have completed their fertility, which

enables matching parents to similar people who finish their fertile years without children.

Conclusion

Overall, our findings suggest that parenthood confers modest mental health benefits for both males and females, although these benefits are shaped by the timing of parenthood, the number of children and socioeconomic circumstances. Importantly, our study highlights significant inequalities in mental health within both the parent group and among people without children, with females, sexual minorities, those without cohabiting partners, and people facing economic precarity showing elevated psychological distress. Addressing these disparities requires targeted social policies and mental health interventions that recognise the diverse experiences of parents and people without children.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used ChatGPT in order to improve the readability of the manuscript. After using this tool, the author(s) reviewed and edited the content as needed and take full responsibility for the content of the publication.

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Table S1. *Weighted descriptive statistics for age 15 demographic, socioeconomic and health characteristics using multiply imputed data (N = 7, 095)*

Variable	% (SE)	Mean (SE)
Demographic, Socioeconomic and Health Covariates		
Sex (if female)	51.4 (0.01)	-
Ethnicity		
White	85.0 (0.00)	-
Mixed ethnicity	3.0 (0.00)	-
Indian, Pakistani or Bangladeshi	5.6 (0.00)	-
Black African or Black Caribbean	3.9 (0.00)	-
Other ethnicity	2.5 (0.00)	-
Main parent age	-	43.12 (0.09)
Single or no parent household (if yes)	26.6 (0.01)	-
Highest level of education in the family (if degree level or higher)	17.6 (0.01)	-
Housing tenure (if family do not own home)	29.9 (0.01)	-
Occupational social class of family		
Higher or lower managerial and professional occupations	38.8 (0.01)	-
Intermediate occupations	29.6 (0.01)	-
Semi-routine and routine occupations	26.9 (0.01)	-
Never worked/long term unemployed	4.7 (0.00)	-
Quality of young person's health in the last 12 months (if not very good or not good at all)	3.7 (0.00)	-
Disability or longstanding illness (if yes)	15.4 (0.01)	-
Psychological distress (GHQ-12) – 0-12 scoring	-	1.82 (0.04)

Table S2. *N(%) of missing cases for all study variables including demographic and socioeconomic characteristics age 15 and 32, parental status and mental health outcomes (full sample N = 7,095)*

Variable	Age (year)	N(%) missing
Demographic, Socioeconomic and Health Characteristics – Age 15		
Sex	First available sweep 1-3	131 (1.85)
Ethnicity	First available sweep 1-4	2 (0.03)
Main parent age	15 (2005)	646 (9.11)
Single parent household	15 (2005)	668 (9.42)
Highest level of education in the family - degree	15 (2005)	892 (12.57)
Housing tenure – homeownership	15 (2005)	593 (8.36)
Occupational social class of family	15 (2005)	1,280 (18.04)
Quality of young person's health in the last 12 months	15 (2005)	1,015 (14.31)
Disability or longstanding illness	15 (2005)	615 (8.67)
Psychological distress (GHQ-12)	15 (2005)	848 (11.95)
Demographic and Socioeconomic Characteristics – Age 32		
Sexual orientation	32 (2022)	815 (11.49)
Cohabiting partner	32 (2022)	7,095 (0.0)
Combined labour market status	32 (2022)	144 (2.03)
Highest level of education - degree	32 (2022)	151 (2.13)
Self-reported financial difficulties	32 (2022)	205 (2.89)
Parental status	32 (2022)	7,095 (0.0)
Age when first child was born (parent sample only N = 3,592)	32 (2022)	129 (3.59)
Number of children (parent sample only N = 3,592)	32 (2022)	37 (1.03)
Fertility intentions (people without children only N = 3,503)	32 (2022)	641 (18.30)
Mental Health Outcome Variables		

Variable	Age (year)	N(%) missing
Psychological distress (GHQ-12)	32 (2022)	342 (4.82)
Life satisfaction	32 (2022)	724 (10.20)

Table S3. *Weighted sample characteristics at age 32 including demographic and socioeconomic characteristics, parental status and mental health outcomes using multiply imputed data (N = 7,095)*

Variable	% (SE)	Mean (SE)
Demographic and Socioeconomic Characteristics		
Sex		
Male	48.6 (0.01)	
Female	51.4 (0.01)	
Ethnicity		
White	85.0 (0.00)	
Mixed ethnicity	3.0 (0.00)	
Indian, Pakistani or Bangladeshi	5.6 (0.00)	
Black African or Black Caribbean	3.9 (0.00)	
Other ethnicity	2.5 (0.00)	
Sexual orientation		
Heterosexual/straight	90.7 (0.00)	
LGBQ	9.3 (0.00)	
Cohabiting partner (if no cohabiting partner)	39.3 (0.01)	
Combined labour market status		
Both employed	49.5 (0.01)	
One person employed (including when no cohabiting partner present)	39.6 (0.01)	
Neither person employed (including when no cohabiting partner present)	10.9 (0.01)	
Highest level of education (if degree level or higher)	37.4 (0.01)	
Self-reported financial difficulties (if just about getting by, finding it quite/very difficult)	32.3 (0.01)	
Parental status (if parent)	54.0 (0.01)	

Variable	% (SE)	Mean (SE)
Age when first child was born (parent sample only N = 3,592)		28.15 (0.27)
Number of children (parent sample only N = 3,592)		1.43 (0.12)
Fertility intentions (people without children only N = 3,503)		
Would definitely like children, currently not trying	32.0 (0.01)	
Would definitely like children, currently trying	10.9 (0.00)	
Might like children in the future, not sure yet	29.1 (0.01)	
Would definitely not like children	28.0 (0.01)	
Mental Health Outcome Variables		
Psychological distress (GHQ-12) – 0-36 scoring		13.33 (0.10)
Life satisfaction – 0-10 scoring		6.67 (0.03)

Table S4. *Modified Poisson regression model adjusting for age 15 demographic, socioeconomic and health characteristics to examine the association between adolescent psychological distress and parental status by age 32*

	Relative Risk [95% CI]		
	Full sample N = 7,095	Males N = 3,012	Females N = 3,952
Unadjusted model			
Psychological distress (GHQ-12) – 0-12 scoring	1.00 [0.99 – 1.01]	0.97*** [0.94 – 0.99]	1.00 [0.99 – 1.01]
Adjusted model including demographic, socioeconomic and health covariates			
Sex (if female)	1.30*** [1.23 – 1.37]	-	-
Ethnicity			
White	-	-	-
Mixed ethnicity	0.91 [0.80 – 1.05]	1.06 [0.85 – 1.33]	0.82** [0.69 – 0.97]
Indian, Pakistani or Bangladeshi	0.81*** [0.74 – 0.88]	0.78 *** [0.67 – 0.90]	0.85*** [0.77 – 0.93]
Black African or Black Caribbean	0.82*** [0.72 – 0.92]	0.78 [0.58 – 1.06]	0.90 [0.79 – 1.04]
Other ethnicity	0.75** [0.59 – 0.95]	0.66 [0.40 – 1.10]	0.77** [0.59 – 1.00]
Main parent age	0.98*** [0.98 – 0.99]	0.98*** [0.97 – 0.98]	0.98*** [0.98 – 0.99]
Single or no parent household (if yes)	1.01 [0.95 – 1.08]	1.05 [0.94 – 1.18]	0.99 [0.92 – 1.06]
Highest level of education in the family (if degree level or higher)	0.75*** [0.69 – 0.82]	0.77*** [0.67 – 0.89]	0.74*** [0.67 – 0.82]
Housing tenure (if family do not own home)	1.11*** [1.05 – 1.18]	1.06 [0.95 – 1.19]	1.16*** [1.08 – 1.24]
Occupational social class of family (if semi and routine profession or never worked/long term unemployed)	1.11*** [1.04 – 1.17]	1.14** [1.03 – 1.26]	1.08** [1.01 – 1.16]
Quality of young person's health in the last 12 months (if not very good or not good at all)	1.04 [0.91 – 1.20]	0.95 [0.69 – 1.31]	1.09 [0.94 – 1.26]
Disability or longstanding illness (if yes)	0.96 [0.90 – 1.04]	1.01 [0.89 – 1.14]	0.93 [0.85 – 1.02]
Psychological distress (GHQ-12) – 0-12 scoring	0.99** [0.98 – 1.00]	0.97** [0.95 – 0.99]	1.00 [0.99 – 1.01]

Note: ****p<.01 **p<.05. The male and female samples do not total the full sample (N = 131 missing).*

Table S5. *Regression model adjusting for age 15 demographic, socioeconomic and health characteristics to examine the association between adolescent psychological distress and age when first biological child was born (parent sample only N = 3,496)*

	Coeff [95% CI]		
	Full sample N = 3,496	Males N = 1,253	Females N = 2,185
Unadjusted model			
Psychological distress (GHQ-12) – 0-12 scoring	-0.12 *** [-0.19 - -0.04]	-0.04 [-0.19 – 0.11]	-0.08 [-0.17 – 0.01]
Adjusted model including demographic, socioeconomic and health covariates			
Sex (if female)	-1.26*** [-1.61 - -0.91]	-	-
Ethnicity			
White	-	-	-
Mixed ethnicity	0.05 [-0.81 – 0.92]	0.48 [-0.92 – 1.88]	-0.12 [-1.22 – 0.97]
Indian, Pakistani or Bangladeshi	1.87*** [1.43 – 2.32]	1.88*** [1.28 – 2.48]	1.89*** [1.28 – 2.51]
Black African or Black Caribbean	0.40 [-0.52 – 1.31]	-0.48 [-3.17 – 2.22]	0.72 [-0.26 – 1.70]
Other ethnicity	2.07*** [0.94 – 3.20]	0.61 [-1.25 – 2.47]	3.03*** [1.54 – 4.52]
Main parent age	0.06*** [0.03 – 0.09]	0.05 [-0.00 – 0.10]	0.07*** [0.03 – 0.12]
Single or no parent household (if yes)	-0.62*** [-1.05 - -0.20]	-0.40 [-1.08 – 0.28]	-0.82*** [-1.37 - -0.27]
Highest level of education in the family (if degree level or higher)	1.38*** [0.90 – 1.85]	1.42*** [0.77 – 2.08]	1.32*** [0.65 – 1.99]
Housing tenure (if family do not own home)	-1.70*** [-2.13 - -1.28]	-1.51*** [-2.18 - -0.84]	-1.89*** [-2.45 - -1.33]
Occupational social class of family (if semi and routine profession or never worked/long term unemployed)	-1.00*** [-1.42 - -0.59]	-1.02*** [-1.67 - -0.37]	-1.00*** [-1.55 - -0.46]
Quality of young person's health in the last 12 months (if not very good or not good at all)	-0.97 [-2.22 – 0.29]	-0.19 [-2.86 – 2.48]	-1.26 [-2.60 – 0.08]
Disability or longstanding illness (if yes)	-0.53 [-1.08 – 0.02]	-0.46 [-1.28 – 0.37]	-0.62 [-1.35 – 0.11]
Psychological distress (GHQ-12) – 0-12 scoring	-0.03 [-0.10 – 0.04]	-0.01 [-0.15 – 0.13]	-0.03 [-0.11 – 0.05]

Note: ****p<.01 **p<.05. Sample is only those who have biological children, N = 96 dropped who did not have any biological children or who had missing data. The male and female samples do not total the full parent sample who have biological children (N = 58 missing).*

Being female, and from a low occupational social class family who do not own their home, increased the likelihood of becoming a parent by age 32. For those who had already transitioned to parenthood, these factors, in addition to growing up in a single parent household, were associated with a younger age when first biological child was born. Conversely, those with older, more educated parents at age 15 were less likely to have children by age 32 and to transition to parenthood later. Similarly, participants from minority ethnic backgrounds showed less likelihood of parenthood by age 32 compared to White participants. Specifically, those from Indian, Pakistani, Bangladeshi or other ethnic backgrounds were more likely to transition to parenthood later than White cohort members.

Table S6. *Weighted mean psychological distress and life satisfaction by demographic and socioeconomic characteristics age 32 (unadjusted) using multiply imputed data (N = 7,095)*

Variable	Psychological distress	Life satisfaction
	Mean (SE)	
Demographic and Socioeconomic Characteristics		
Sex		
Male	12.75 (0.15)	6.61 (0.05)
Female	13.88 (0.13)	6.73 (0.04)
Ethnicity		
White	13.39 (0.11)	6.71 (0.04)
Mixed ethnicity	12.85 (0.52)	6.49 (0.16)
Indian, Pakistani or Bangladeshi	12.93 (0.35)	6.52 (0.12)
Black African or Black Caribbean	11.91 (0.37)	6.54 (0.14)
Other ethnicity	14.86 (0.80)	6.16 (0.24)
Sexual orientation		
Heterosexual/straight	13.06 (0.10)	6.74 (0.04)
LGBQ	15.81 (0.39)	6.04 (0.13)
Cohabiting partner		
Yes	12.35 (0.11)	7.26 (0.04)
No	14.84 (0.18)	5.76 (0.06)
Combined labour market status		
Both employed	11.90 (0.10)	7.37 (0.04)
One person employed (including when no cohabiting partner present)	13.81 (0.16)	6.28 (0.06)
Neither person employed (including when no cohabiting partner present)	18.10 (0.40)	4.95 (0.14)
Highest level of education		

Variable	Psychological distress	Life satisfaction
No degree	13.78 (0.14)	6.50 (0.05)
Degree level or higher	12.58 (0.12)	6.97 (0.04)
Self-reported financial difficulties		
Living comfortably or doing alright	11.74 (0.09)	7.24 (0.03)
Just about getting by, finding it quite/very difficult	16.64 (0.20)	5.49 (0.07)
Parental status		
No children	13.51 (0.15)	6.41 (0.05)
Parent	13.17 (0.13)	6.90 (0.05)
Fertility intentions (people without children only N = 3,503)		
Would definitely like children, currently not trying	13.17 (0.24)	6.50 (0.08)
Would definitely like children, currently trying	12.81 (0.38)	7.06 (0.12)
Might like children in the future, not sure yet	13.94 (0.29)	6.16 (0.09)
Would definitely not like children	14.44 (0.48)	5.91 (0.17)

Table S7. *Weighted mean psychological distress and life satisfaction by sex to examine the demographic and socioeconomic inequalities in mental health within the parent group and amongst people without children (male parents N = 1,293, males without children N = 1,719, female parents N = 2,240, females without children N =1,712)*

	Mean (SE)							
	Psychological distress				Life satisfaction			
	Parents		People without children		Parents		People without children	
	Males	Females	Males	Females	Males	Females	Males	Females
Ethnicity								
White	12.39 (0.23)	13.92 (0.18)	13.04 (0.23)	14.18 (0.22)	6.96 (0.08)	6.90 (0.07)	6.38 (0.08)	6.55 (0.08)
Mixed ethnicity	13.06 (1.31)	12.77 (0.81)	11.68 (1.31)	14.22 (0.97)	6.24 (0.46)	6.89 (0.22)	6.48 (0.34)	6.28 (0.28)
Indian, Pakistani or Bangladeshi	12.56 (0.80)	12.25 (0.37)	13.56 (0.88)	13.19 (0.42)	6.80 (0.19)	7.00 (0.16)	5.99 (0.28)	6.43 (0.19)
Black African or Black Caribbean	12.05 (1.21)	12.50 (0.67)	10.91 (0.91)	12.89 (0.72)	6.74 (0.40)	6.42 (0.24)	6.93 (0.30)	6.40 (0.26)
Other ethnicity	11.62 (1.15)	14.98 (1.27)	16.08 (1.71)	15.35 (1.55)	7.06 (0.60)	6.56 (0.35)	5.70 (0.46)	5.78 (0.50)
Sexual orientation								
Heterosexual/straight	12.28 (0.21)	13.56 (0.17)	12.78 (0.22)	13.82 (0.21)	6.95 (0.08)	6.94 (0.06)	6.42 (0.08)	6.56 (0.07)
LGBQ	16.33 (1.92)	16.55 (0.78)	15.36 (0.76)	15.55 (0.56)	6.31 (0.47)	6.06 (0.25)	5.84 (0.24)	6.19 (0.17)
Cohabiting partner								
Yes	11.69 (0.20)	12.85 (0.17)	11.84 (0.25)	13.13 (0.25)	7.27 (0.07)	7.35 (0.06)	7.14 (0.07)	7.18 (0.07)
No	15.02 (0.61)	15.97 (0.35)	14.16 (0.33)	14.96 (0.30)	5.66 (0.21)	5.77 (0.12)	5.68 (0.11)	5.90 (0.10)
Combined labour market status								
Both employed	11.06 (0.19)	12.34 (0.18)	11.48 (0.24)	12.89 (0.24)	7.42 (0.08)	7.47 (0.06)	7.24 (0.07)	7.25 (0.07)
One person employed (including when no	13.36 (0.41)	14.29 (0.29)	13.30 (0.32)	14.53 (0.30)	6.54 (0.15)	6.53 (0.10)	6.01 (0.11)	6.15 (0.10)

	Mean (SE)							
	Psychological distress				Life satisfaction			
	Parents		People without children		Parents		People without children	
	Males	Females	Males	Females	Males	Females	Males	Females
cohabiting partner present)								
Neither person employed (including when no cohabiting partner present)	18.19 (1.06)	18.60 (0.61)	18.30 (0.82)	17.25 (0.82)	5.03 (0.37)	5.23 (0.23)	4.42 (0.30)	4.96 (0.29)
Highest level of education								
No degree	12.74 (0.26)	14.14 (0.21)	13.85 (0.32)	15.00 (0.35)	6.76 (0.10)	6.71 (0.08)	6.06 (0.11)	6.14 (0.12)
Degree level or higher	11.31 (0.27)	12.90 (0.23)	12.17 (0.26)	13.39 (0.21)	7.47 (0.10)	7.28 (0.08)	6.70 (0.08)	6.79 (0.07)
Self-reported financial difficulties								
Living comfortably or doing alright	10.88 (0.19)	11.85 (0.16)	11.64 (0.21)	12.75 (0.18)	7.47 (0.07)	7.55 (0.06)	6.94 (0.07)	7.02 (0.07)
Just about getting by, finding it quite/very difficult	15.73 (0.47)	16.60 (0.29)	17.17 (0.49)	17.59 (0.46)	5.76 (0.16)	5.90 (0.10)	4.68 (0.16)	5.16 (0.14)

Table S8. *Unadjusted and adjusted regression models to examine the association between demographic and socioeconomic characteristics at age 32 and psychological distress and life satisfaction for males and females within the parent group and amongst people without children (male parents N = 1,293, female parents N = 2,240, males without children N = 1,719, females without children N = 1,712)*

	Coeff [95% CI]							
	Psychological distress				Life satisfaction			
	Parents		People without children		Parents		People without children	
	Males	Females	Males	Females	Males	Females	Males	Females
Unadjusted								
Ethnicity								
White (ref)	0.11 [-0.31 - 0.52]	-0.18 [-0.44 - 0.08]	-0.22 [-0.58 - 0.15]	0.01 [-0.31 - 0.32]	-0.34 [-0.77 - 0.09]	0.00 [-0.22 - 0.22]	0.05 [-0.27 - 0.37]	-0.13 [-0.40 - 0.15]
Mixed ethnicity	0.03 [-0.24 - 0.29]	-0.27*** [-0.40 - -0.14]	0.08 [-0.20 - 0.37]	-0.16** [-0.30 - -0.01]	-0.07 [-0.27 - 0.12]	0.05 [-0.11 - 0.22]	-0.19 [-0.46 - 0.09]	-0.05 [-0.24 - 0.14]
Indian, Pakistani or Bangladeshi	-0.05 [-0.44 - 0.33]	-0.23** [-0.44 - -0.01]	-0.34** [-0.64 - -0.04]	-0.21 [-0.44 - 0.03]	-0.11 [-0.49 - 0.28]	-0.22 [-0.45 - 0.00]	0.26 [-0.03 - 0.54]	-0.07 [-0.31 - 0.18]
Black African or Black Caribbean	-0.13 [-0.49 - 0.24]	0.17*** [-0.23 - 0.57]	0.49 [-0.05 - 1.02]	0.19 [-0.30 - 0.68]	0.05 [-0.51 - 0.61]	-0.16 [-0.48 - 0.17]	-0.32 [-0.75 - 0.11]	-0.36 [-0.82 - 0.11]
Other ethnicity								
Sexual orientation								
Heterosexual/straight (ref)	0.65** [0.04 – 1.26]	0.48*** [0.23 – 0.73]	0.41*** [0.16 – 0.66]	0.28*** [0.08 – 0.47]	-0.30 [-0.75 – 0.15]	-0.42*** [-0.66 - -0.18]	-0.27** [-0.50 - -0.04]	-0.18** [-0.35 - -0.01]
LGBQ								
Cohabiting partner								
Yes (ref)	0.53*** [0.33 – 0.73]	0.50*** [0.38 – 0.62]	0.37*** [0.24 – 0.50]	0.29*** [0.16 – 0.39]	-0.76*** [-0.96 - -0.56]	-0.74*** [-0.87 - -0.62]	-0.69** [-0.81 - -0.56]	-0.60*** [-0.72 - -0.49]
No								

	Coeff [95% CI]							
	Psychological distress				Life satisfaction			
	Parents		People without children		Parents		People without children	
	Males	Females	Males	Females	Males	Females	Males	Females
Combined labour market status								
Both employed (ref)								
One person employed (including when no cohabiting partner present)	0.37*** [0.23 – 0.51]	0.31*** [0.21 – 0.42]	0.29*** [0.17 – 0.42]	0.26*** [0.14 – 0.38]	-0.41*** [-0.57 - -0.26]	-0.44*** [-0.55 - -0.34]	-0.58*** [-0.70 - -0.45]	-0.52*** [-0.63 - -0.41]
Neither person employed (including when no cohabiting partner present)	1.14*** [0.80 – 1.48]	1.00*** [0.80 – 1.20]	1.09*** [0.82 – 1.36]	0.70*** [0.43 – 0.96]	-1.12*** [-1.46 - -0.78]	-1.06*** [-1.27 - -0.84]	-1.33*** [-1.61 - -1.04]	-1.08*** [-1.36 - -0.81]
Highest level of education								
No degree (ref)								
Degree level or higher	-0.23*** [-0.35 - -0.11]	-0.20*** [-0.30 - -0.10]	-0.27*** [-0.40 - -0.14]	-0.26*** [-0.39 - -0.13]	0.33*** [0.21 – 0.46]	0.27*** [0.17 – 0.37]	0.30*** [0.17 – 0.43]	0.30*** [0.17 – 0.43]
Self-reported financial difficulties								
Living comfortably or doing alright (ref)								
Just about getting by, finding it quite/very difficult	0.78*** [0.62 – 0.93]	0.76*** [0.65 – 0.87]	0.88*** [0.72 – 1.05]	0.77*** [0.62 – 0.93]	-0.81*** [-0.97 - -0.64]	-0.78*** [-0.89 - -0.67]	-1.07*** [-1.23 - -0.91]	-0.88*** [-1.02 - -0.73]

	Coeff [95% CI]							
	Psychological distress				Life satisfaction			
	Parents		People without children		Parents		People without children	
	Males	Females	Males	Females	Males	Females	Males	Females
Adjusted for demographic, socioeconomic and health characteristics at age 15								
Ethnicity								
White (ref)	0.03	-0.22	-0.32	-0.01	-0.24	0.07	0.12	-0.11
	[-0.39 - 0.46]	[-0.47 - 0.03]	[-0.67 - 0.04]	[-0.31 - 0.29]	[-0.64 - 0.17]	[-0.15 - 0.28]	[-0.20 - 0.44]	[-0.38 - 0.16]
Mixed ethnicity	0.03	-0.21***	0.05	-0.19**	-0.08	0.03	-0.14	0.01
	[-0.22 - 0.27]	[-0.34 - -0.08]	[-0.17 - 0.27]	[-0.35 - -0.04]	[-0.27 - 0.11]	[-0.14 - 0.20]	[-0.35 - 0.08]	[-0.19 - 0.20]
Indian, Pakistani or Bangladeshi	-0.09	-0.24**	-0.51***	-0.31**	-0.08	-0.19	0.39**	0.07
	[-0.52 - 0.34]	[-0.47 - -0.01]	[-0.82 - -0.19]	[-0.57 - -0.05]	[-0.51 - 0.36]	[-0.42 - 0.05]	[0.09 - 0.69]	[-0.20 - 0.34]
Black African or Black Caribbean	-0.21	0.08	0.41	0.01	0.09	-0.05	-0.25	-0.22
	[-0.58 - 0.17]	[-0.32 - 0.49]	[-0.14 - 0.96]	[-0.47 - 0.49]	[-0.46 - 0.65]	[-0.39 - 0.28]	[-0.69 - 0.18]	[-0.67 - 0.23]
Other ethnicity								
Sexual orientation								
Heterosexual/straight (ref)	0.58	0.33***	0.31**	0.18	-0.24	-0.30**	-0.16	-0.12
	[-0.03 – 0.18]	[0.10 – 0.56]	[0.07 – 0.54]	[-0.01 – 0.37]	[-0.70 – 0.21]	[-0.53 - -0.07]	[-0.39 – 0.06]	[-0.29 – 0.05]
LGBQ								
Cohabiting partner								
Yes (ref)	0.51***	0.48***	0.30***	0.28***	-0.71***	-0.69***	-0.63***	-0.56***
	[0.31 – 0.70]	[0.35 – 0.60]	[0.18 – 0.43]	[0.16 – 0.39]	[-0.91 - -0.50]	[-0.82 - -0.57]	[-0.76 - -0.51]	[-0.67 - -0.44]
No								
Combined labour market status								
Both employed (ref)	0.35***	0.32***	0.26***	0.26***	-0.37***	-0.41***	-0.55***	-0.48***
	[0.21 – 0.50]	[0.21 – 0.43]	[0.14 – 0.38]	[0.14 – 0.37]	[-0.53 - -0.21]	[-0.52 – 0.30]	[-0.67 - -0.43]	[-0.60 - -0.37]
One person employed (including								

	Coeff [95% CI]							
	Psychological distress				Life satisfaction			
	Parents		People without children		Parents		People without children	
	Males	Females	Males	Females	Males	Females	Males	Females
when no cohabiting partner present) Neither person employed (including when no cohabiting partner present)	1.12*** [0.78 – 1.45]	0.94*** [0.74 – 1.14]	0.92*** [0.64 – 1.20]	0.66*** [0.40 – 0.92]	-1.08*** [-1.42 - -0.74]	-0.96*** [-1.18 - -0.75]	-1.19*** [-1.48 - -0.89]	-1.00*** [-1.27 - -0.73]
Highest level of education No degree (ref) Degree level or higher	-0.21*** [-0.34 - -0.09]	-0.11** [-0.22 - -0.01]	-0.23*** [-0.37 - -0.09]	-0.19*** [-0.31 - -0.07]	0.29*** [0.16 – 0.41]	0.19*** [0.09 – 0.29]	0.24*** [-0.10 – 0.38]	0.21*** [0.09 – 0.34]
Self-reported financial difficulties Living comfortably or doing alright (ref) Just about getting by, finding it quite/very difficult	0.74*** [0.59 – 0.90]	0.71*** [0.60 – 0.81]	0.81*** [0.65 – 0.97]	0.70*** [0.55 – 0.85]	-0.77*** [-0.93 - -0.61]	-0.72*** [-0.82 - -0.61]	-1.00*** [-1.15 - -0.84]	-0.80*** [-0.95 - -0.65
Adjusted for demographic, socioeconomic and health characteristics at ages 15 and 32								
Ethnicity White (ref) Mixed ethnicity Indian, Pakistani or Bangladeshi	0.00 [-0.34 - 0.34] -0.02 [-0.26 - 0.22] 0.01	-0.27** [-0.49 - -0.04] 0.28*** [-0.41 - -0.15] -0.33***	-0.20 [-0.53 - 0.13] -0.02 [-0.24 - 0.21] -0.45***	-0.14 [-0.41 - 0.13] -0.20** [-0.35 - -0.04] -0.28**	-0.21 [-0.54 - 0.12] -0.06 [-0.25 - 0.14] -0.11	0.11 [-0.10 - 0.31] 0.07 [-0.09 - 0.24] -0.02	0.01 [-0.27 - 0.28] 0.02 [-0.18 - 0.22] 0.47***	0.10 [-0.15 - 0.34] 0.08 [-0.11 - 0.27] 0.11

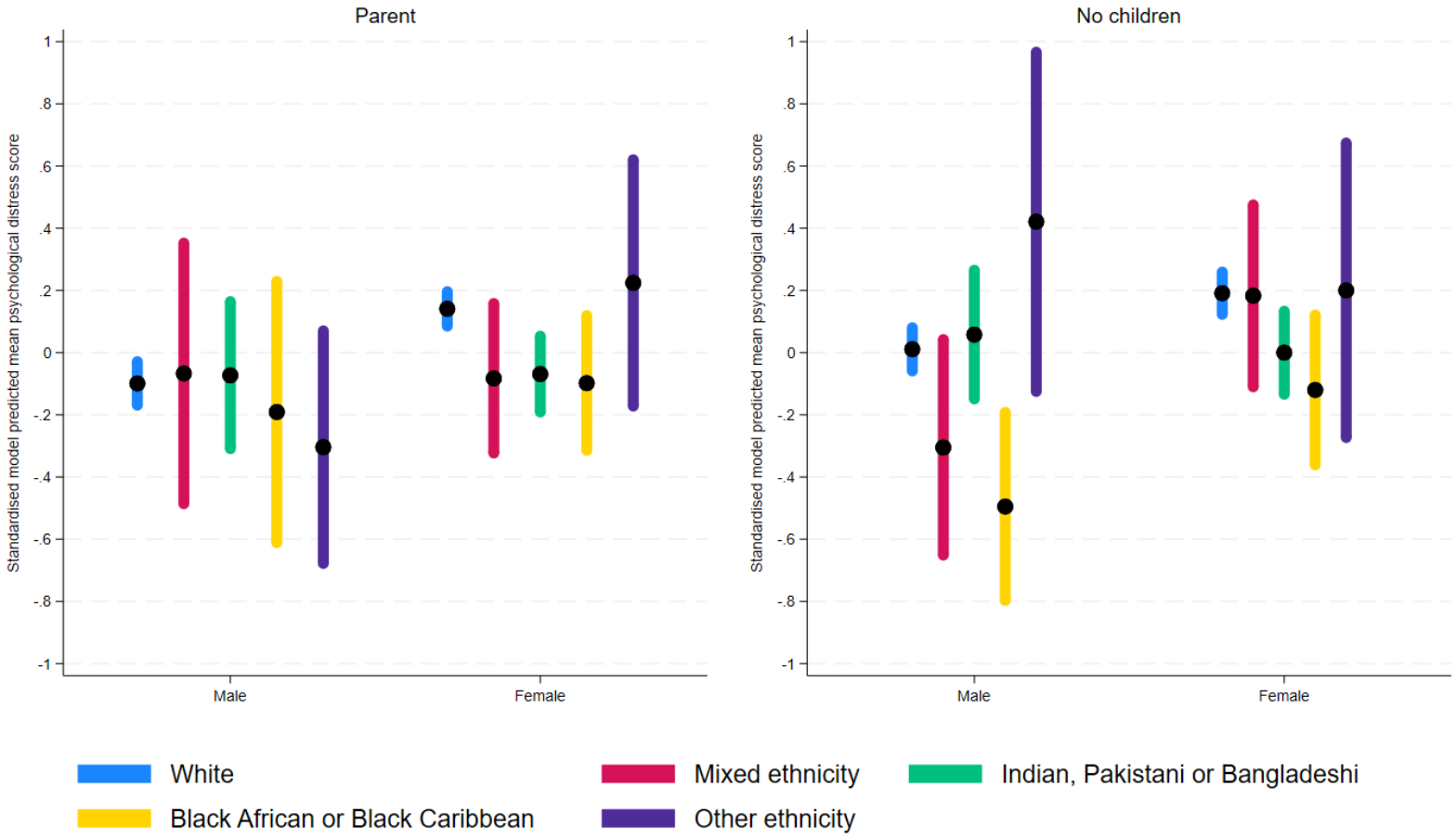
	Coeff [95% CI]							
	Psychological distress				Life satisfaction			
	Parents		People without children		Parents		People without children	
	Males	Females	Males	Females	Males	Females	Males	Females
Black African or Black Caribbean Other ethnicity	[-0.39 - 0.40] -0.15 [-0.56 - 0.26]	[-0.56 - -0.11] -0.03 [-0.40 - 0.34]	[-0.79 - -0.12] 0.21 [-0.38 - 0.80]	[-0.53 - -0.04] 0.10 [-0.34 - 0.54]	[-0.48 - 0.27] -0.03 [-0.58 - 0.53]	[-0.26 - 0.23] 0.04 [-0.27 - 0.35]	[0.15 - 0.78] 0.10 [-0.33 - 0.52]	[-0.14 - 0.36] -0.28 [-0.68 - 0.13]
Sexual orientation Heterosexual/straight (ref) LGBQ	 0.47 [-0.04 – 0.98]	 0.27** [0.05 – 0.48]	 0.26** [0.03 – 0.48]	 0.15 [-0.03 – 0.32]	 -0.16 [-0.54 – 0.22]	 -0.25** [-0.46 - -0.03]	 -0.08 [-0.28 – 0.11]	 -0.06 [-0.21 – 0.09]
Cohabiting partner Yes (ref) No	 0.10 [-0.12 – 0.31]	 0.05 [-0.12 – 0.22]	 -0.09 [-0.41 – 0.23]	 -0.03 [-0.32 – 0.27]	 -0.40*** [-0.63 - -0.16]	 -0.39*** [-0.56 - -0.21]	 -0.33*** [-0.57 - -0.09]	 -0.34** [-0.63 - -0.05]
Combined labour market status Both employed (ref) One person employed (including when no cohabiting partner present) Neither person employed (including when no cohabiting partner present)	 0.19** [0.03 – 0.35] 0.74*** [0.42 – 1.06]	 0.18*** [0.05 – 0.32] 0.65*** [0.41 – 0.89]	 0.21 [-0.11 – 0.54] 0.66*** [0.23 – 1.09]	 0.18 [-0.12 – 0.47] 0.43** [0.05 – 0.80]	 -0.06 [-0.24 – 0.11] -0.51*** [-0.87 - -0.15]	 -0.08 [-0.22 – 0.06] -0.40*** [-0.67 - -0.14]	 -0.11 [-0.35 – 0.13] -0.50*** [-0.86 - -0.15]	 -0.06 [-0.35 – 0.22] -0.44** [-0.80 - -0.08]
Highest level of education								

	Coeff [95% CI]							
	Psychological distress				Life satisfaction			
	Parents		People without children		Parents		People without children	
	Males	Females	Males	Females	Males	Females	Males	Females
No degree (ref) Degree level or higher	-0.06 [-0.18 – 0.06]	0.07 [-0.03 – 0.16]	-0.09 [-0.23 – 0.05]	-0.07 [-0.18 – 0.05]	0.11 [-0.01 – 0.24]	0.00 [-0.09 – 0.10]	0.02 [-0.10 – 0.15]	0.03 [-0.09 – 0.14]
Self-reported financial difficulties Living comfortably or doing alright (ref) Just about getting by, finding it quite/very difficult	0.59*** [0.45 – 0.73]	0.58*** [0.48 – 0.68]	0.69*** [0.52 – 0.85]	0.62*** [0.47 – 0.76]	-0.60*** [-0.76 - -0.45]	-0.55*** [-0.66 - -0.45]	-0.83*** [-1.00 - -0.67]	-0.66*** [-0.81 - -0.51]

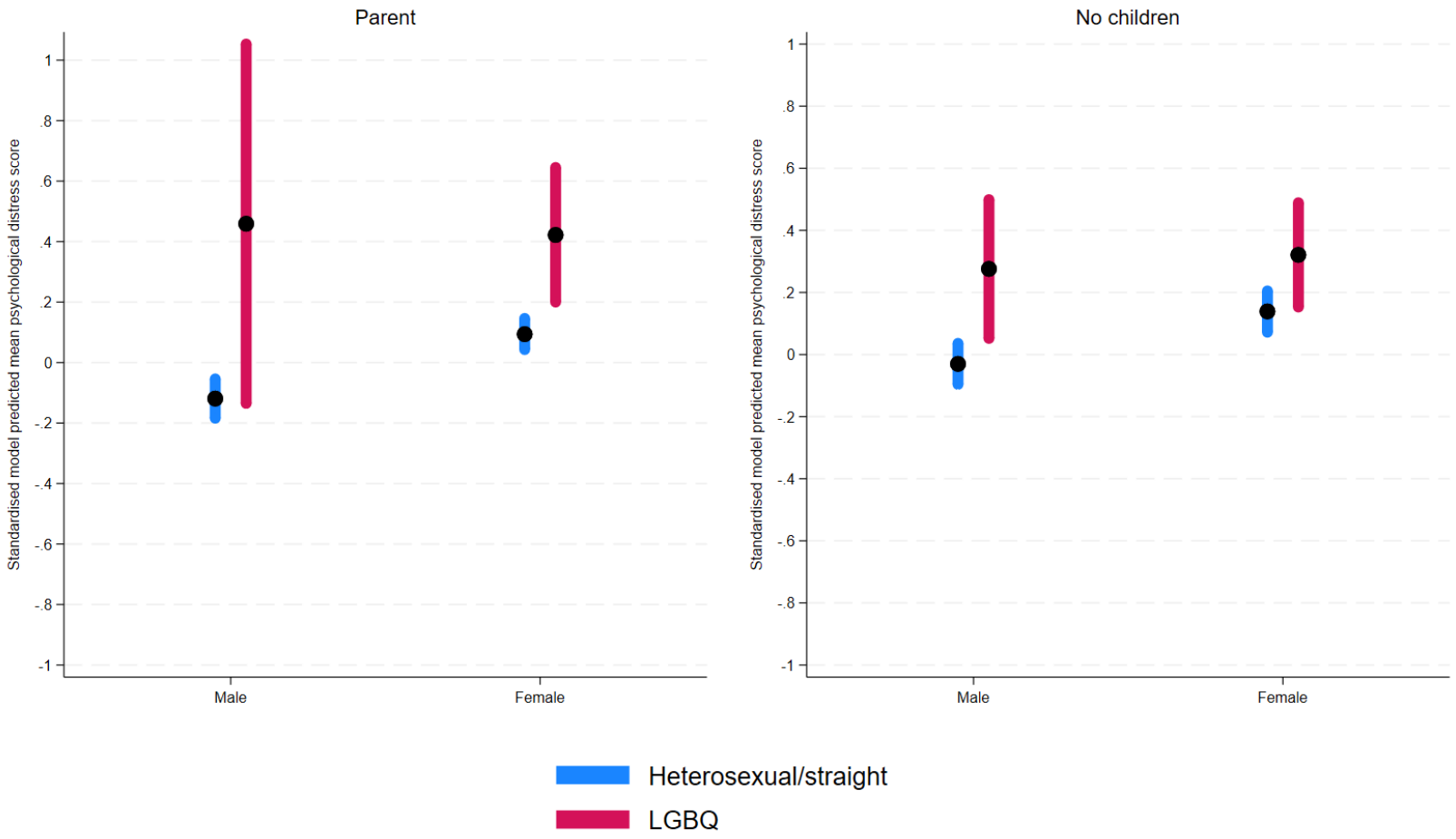
*Note: ***p<.01 **p<.05.*

Figure S1. *Margins plots presenting demographic and socioeconomic inequalities in mental health using model predicted mean psychological distress scores for ethnicity (a.), sexual orientation (b.), cohabiting partner (c.), combined labour market status (d.), education level (e.) and self-reported financial difficulties (f.)*

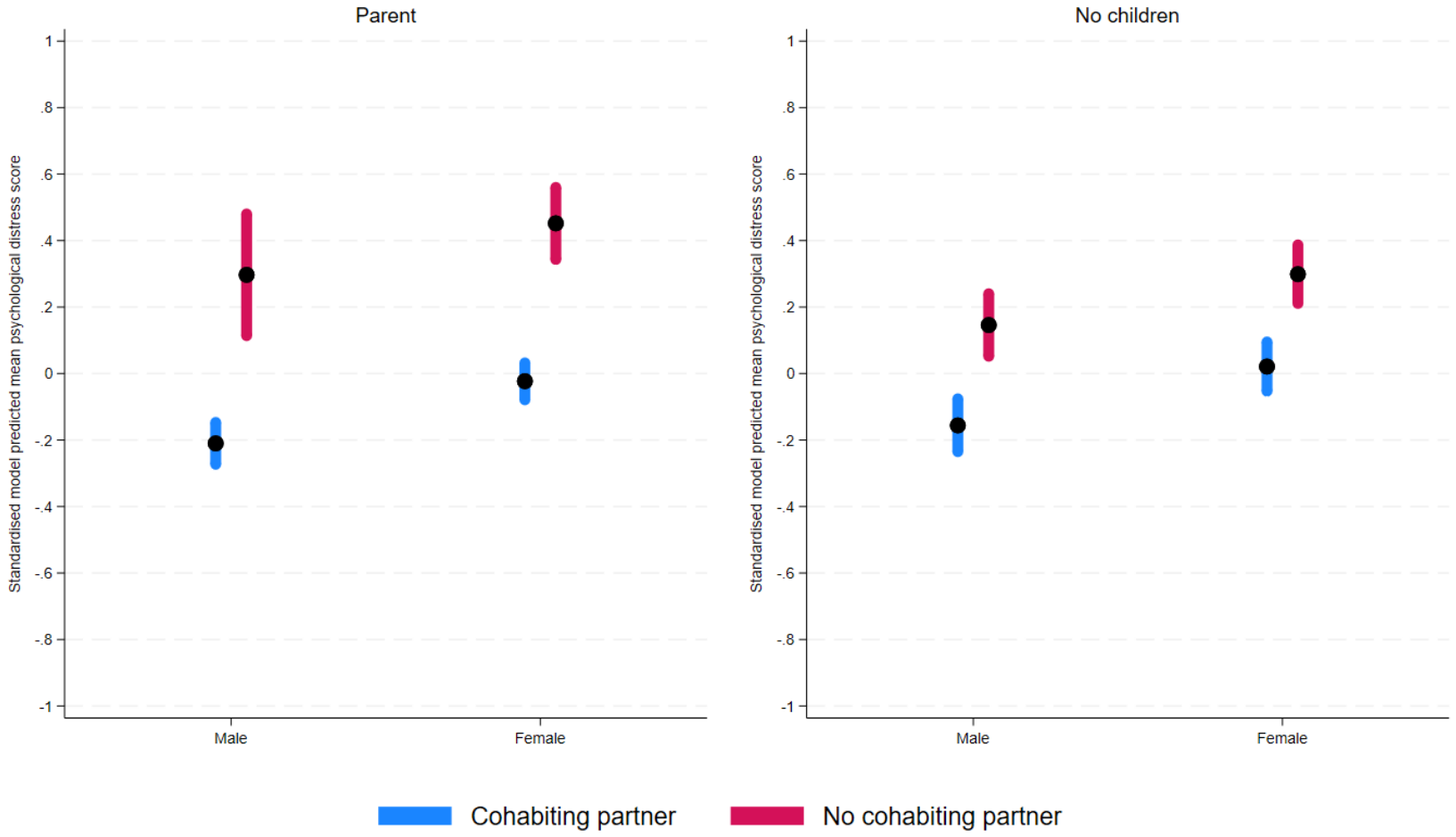
a.



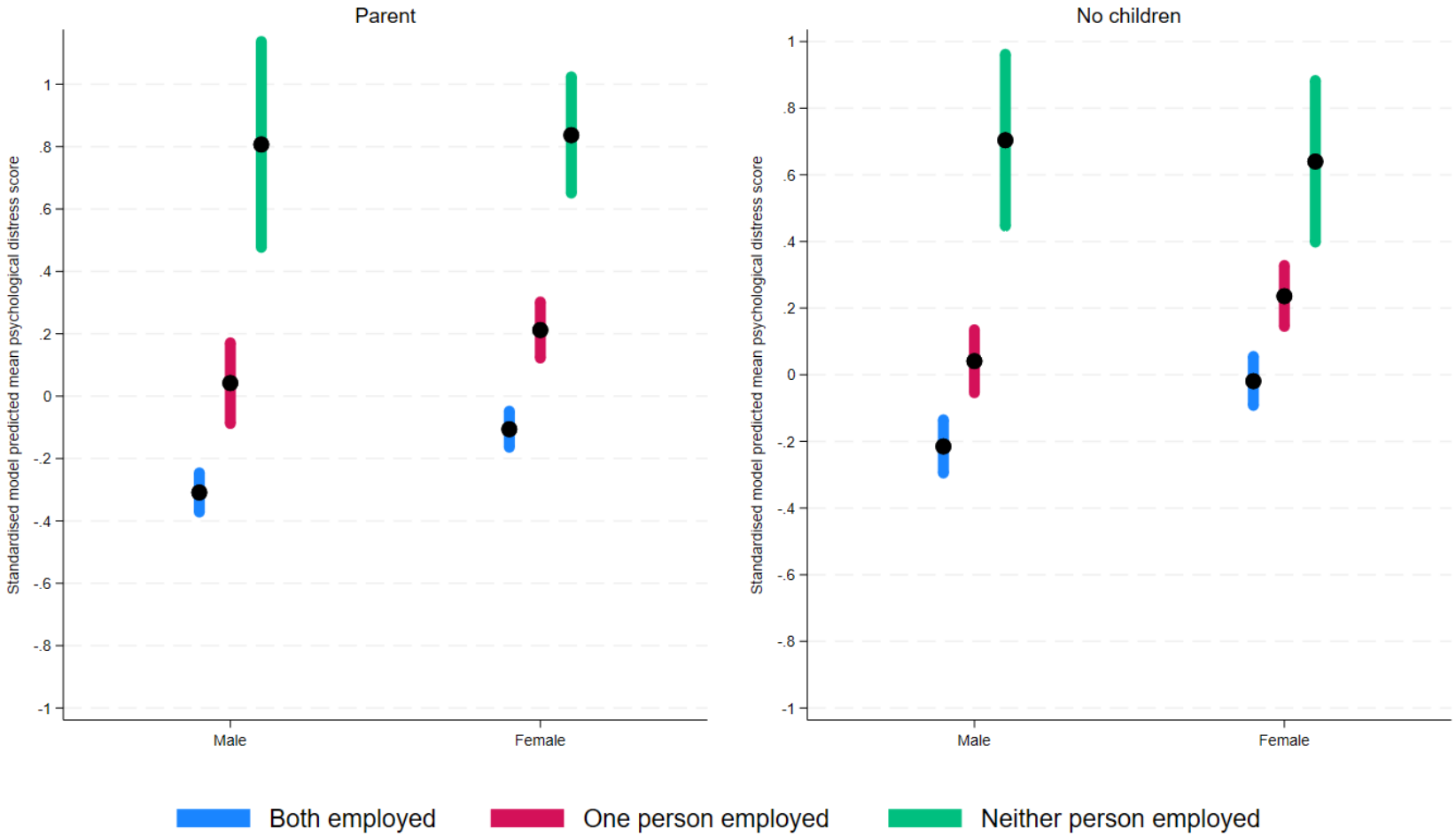
b.


Parent
No children
Standardised model predicted mean psychological distress score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
Heterosexual/straight
LGBQ

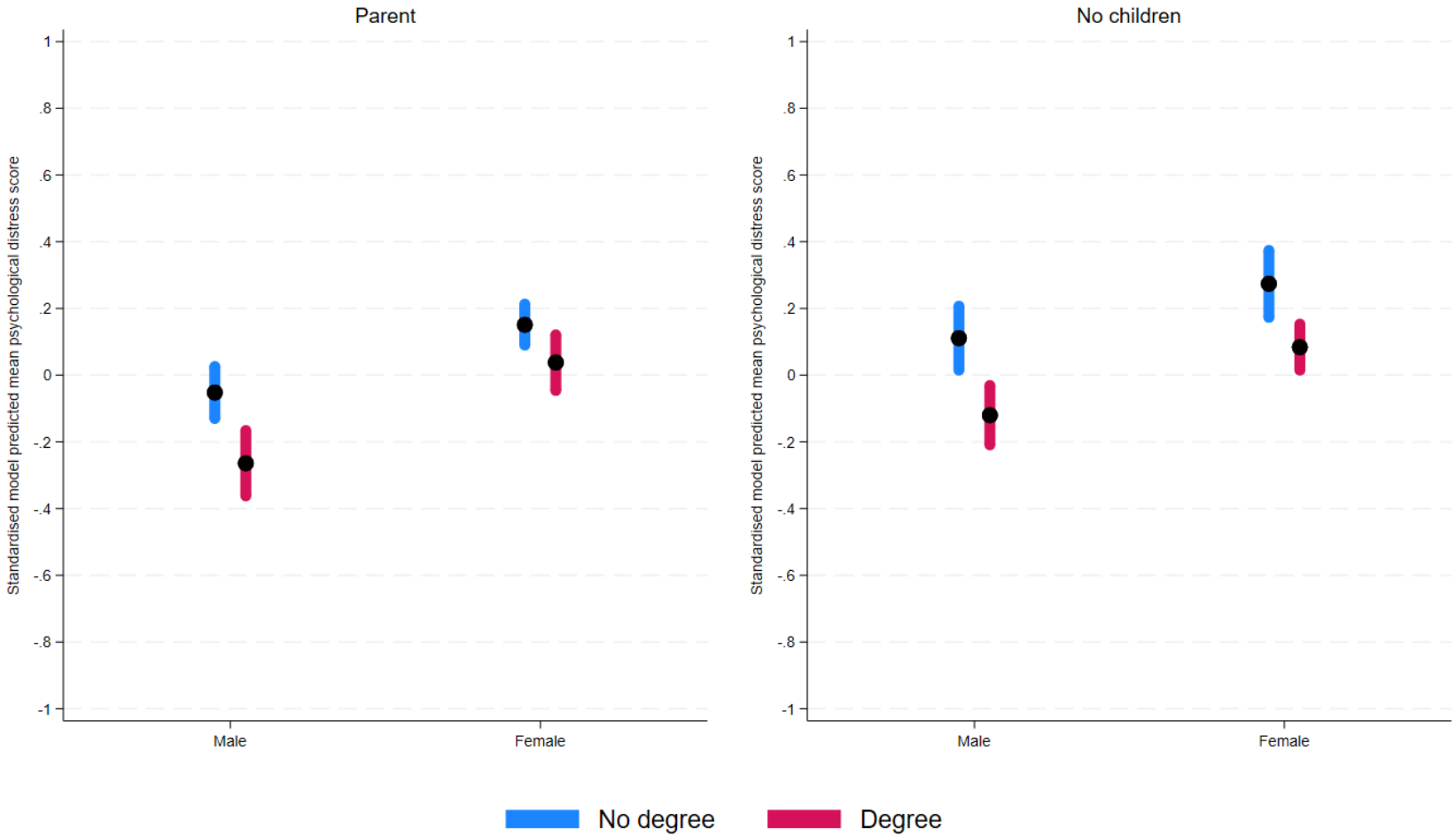
c.


Parent
No children
Standardised model predicted mean psychological distress score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
Cohabiting partner
No cohabiting partner

d.


Parent
No children
Standardised model predicted mean psychological distress score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
Both employed
One person employed
Neither person employed

e.


Parent
No children
Standardised model predicted mean psychological distress score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
No degree
Degree

f.

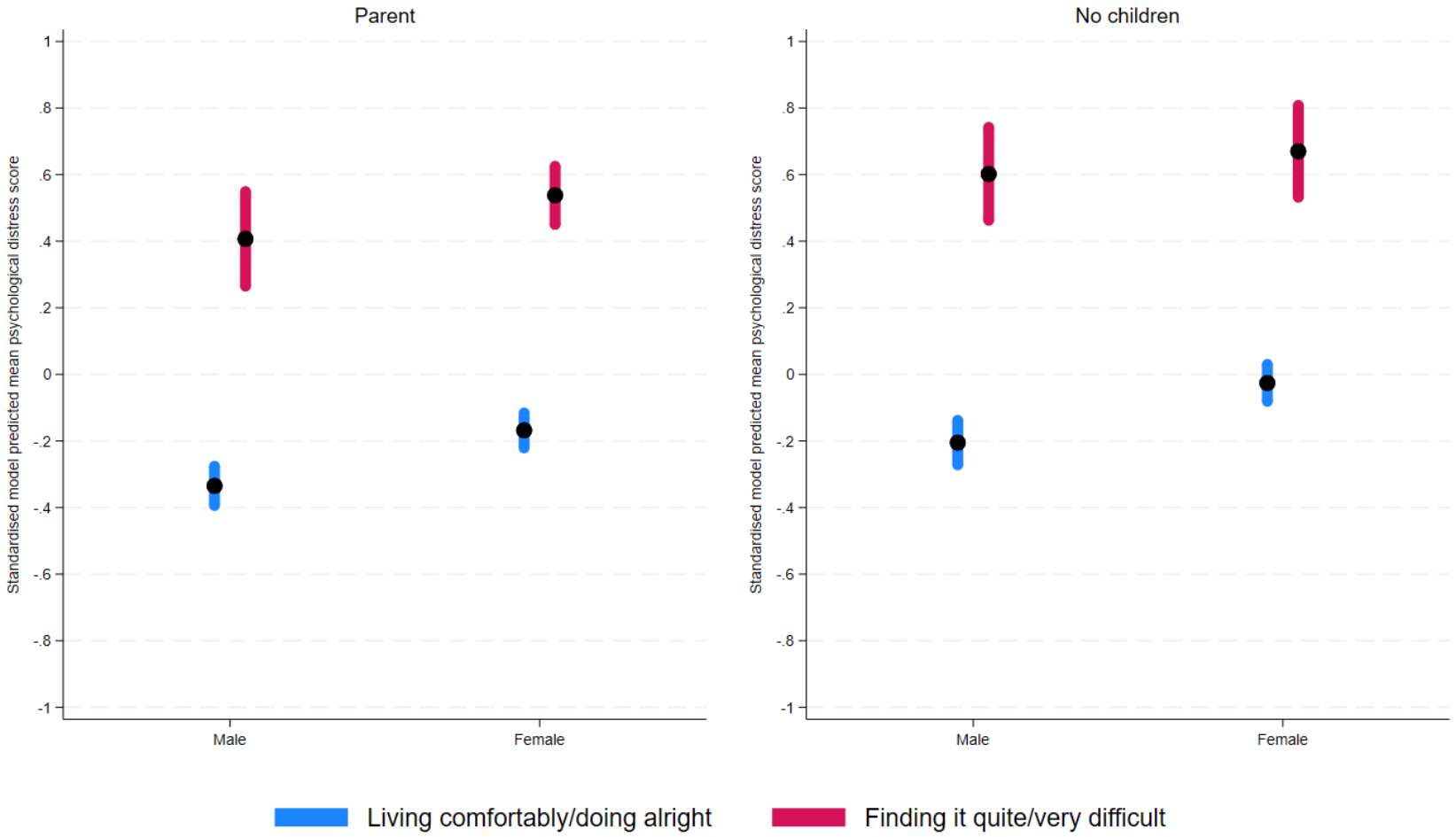
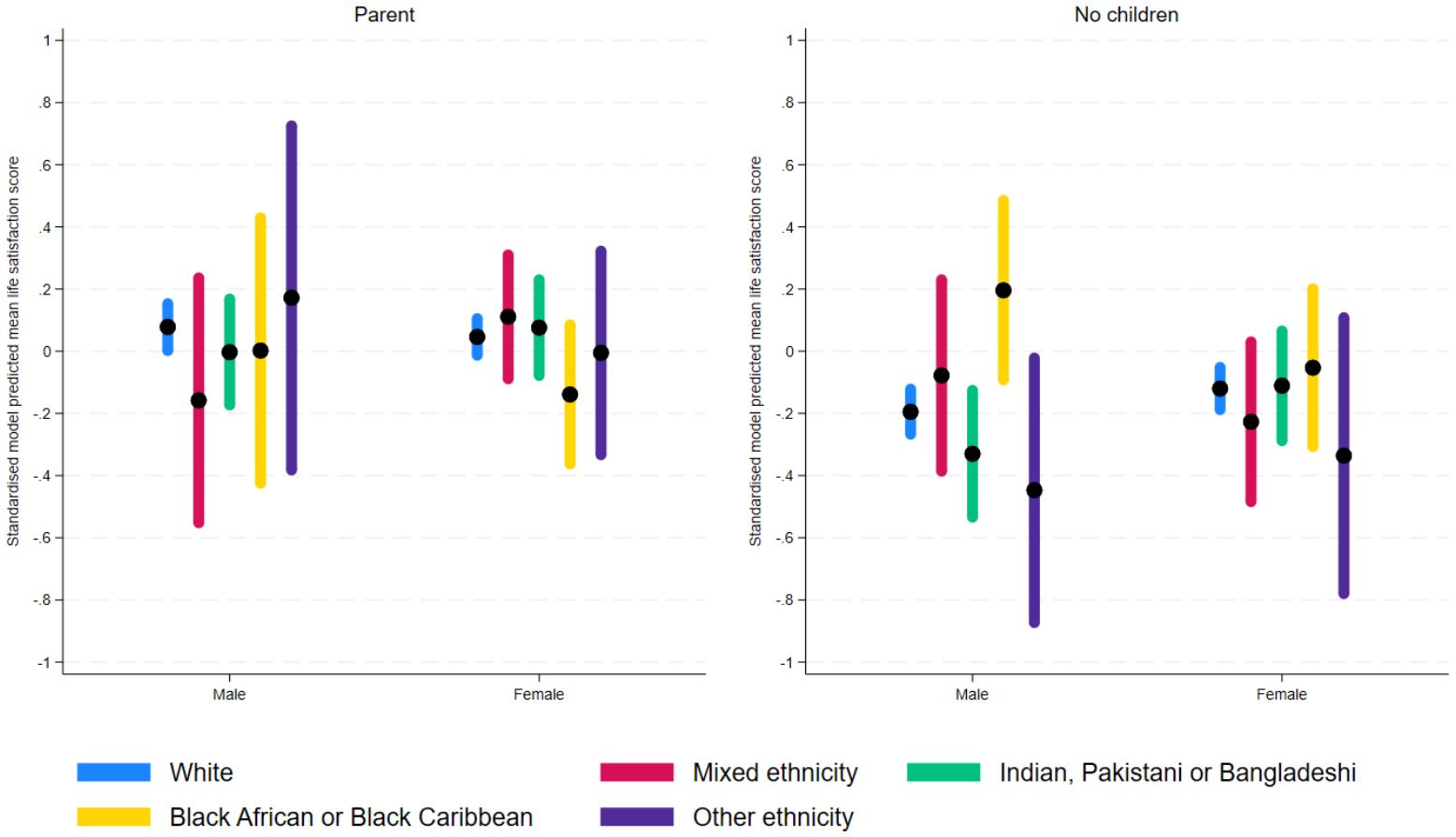
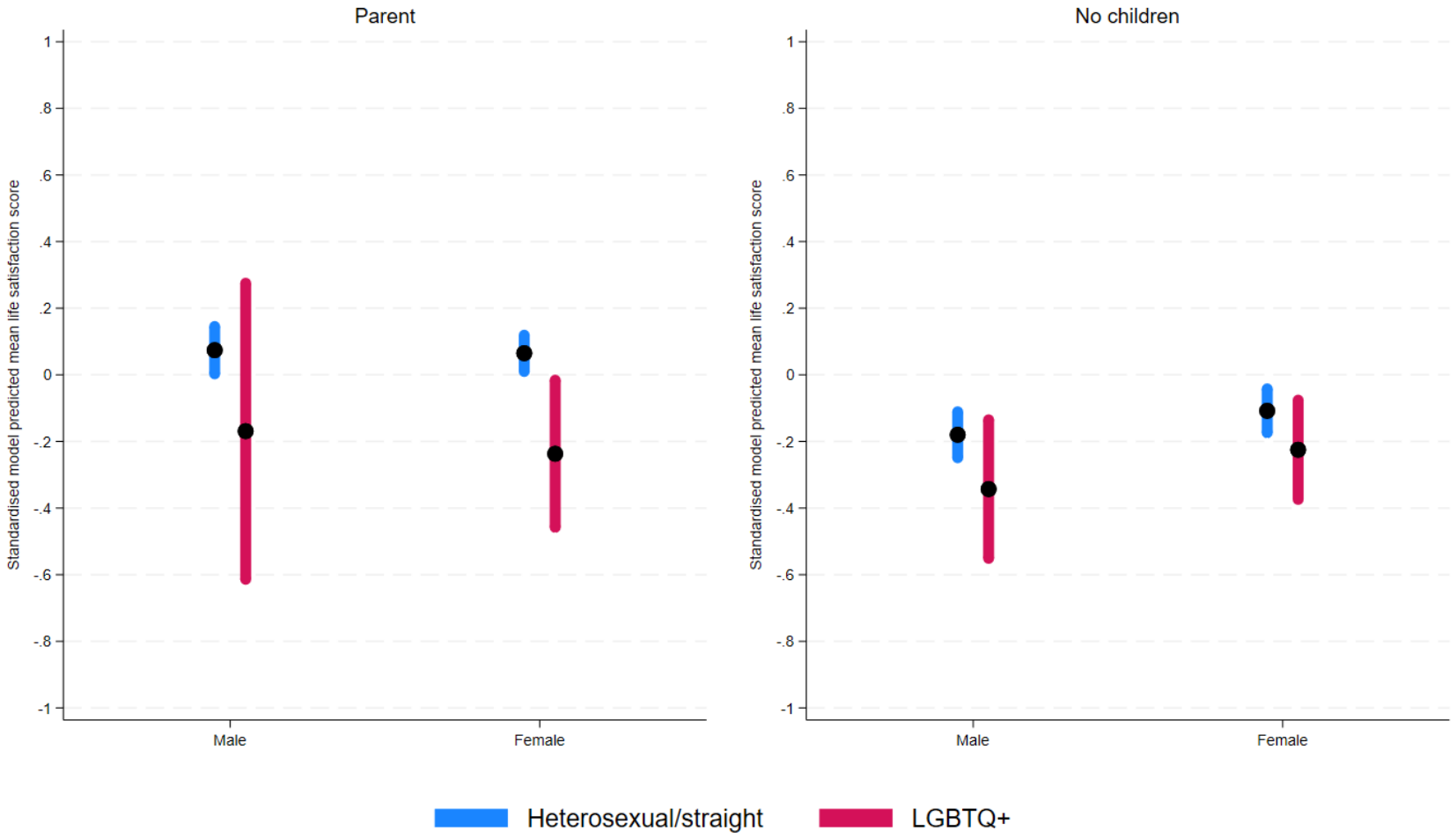

Parent
No children
Standardised model predicted mean psychological distress score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
Living comfortably/doing alright
Finding it quite/very difficult

Figure S2. *Margins plots presenting demographic and socioeconomic inequalities in mental health using model predicted mean life satisfaction scores for ethnicity (a.), sexual orientation (b.), cohabiting partner (c.), combined labour market status (d.), education level (e.) and self-reported financial difficulties (f.)*

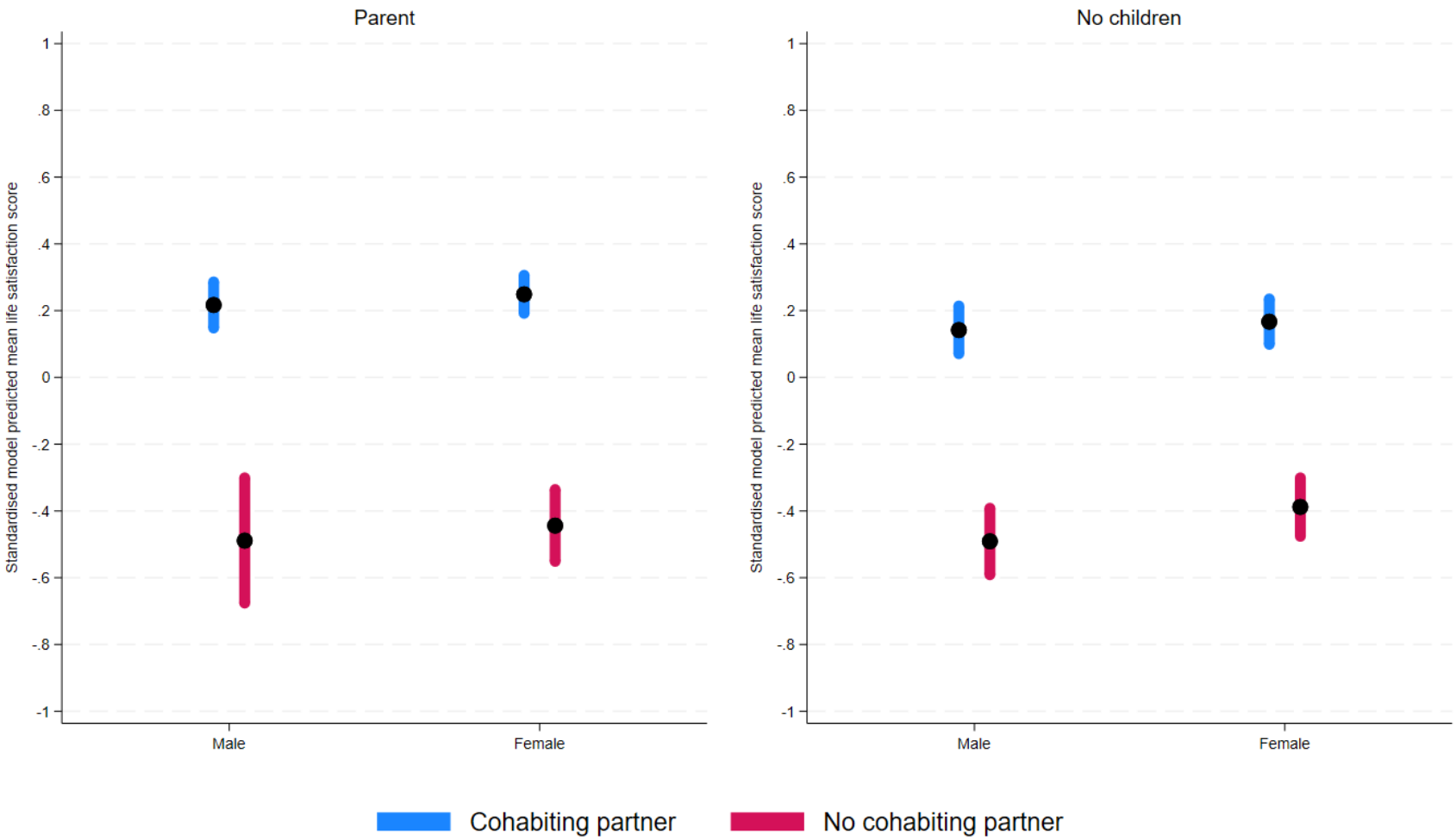
a.



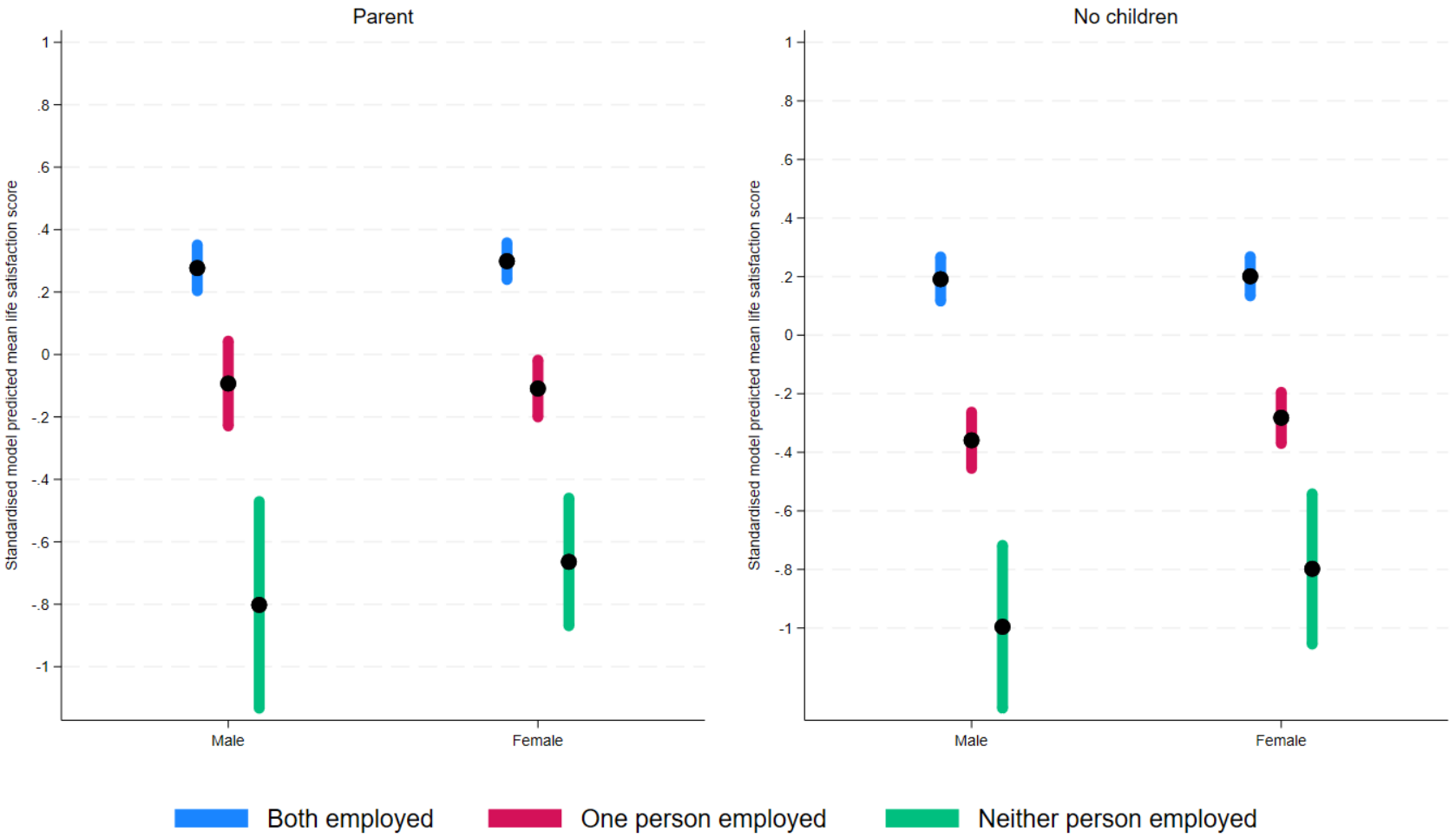
b.


Parent
No children
Standardised model predicted mean life satisfaction score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
Heterosexual/straight
LGBTQ+

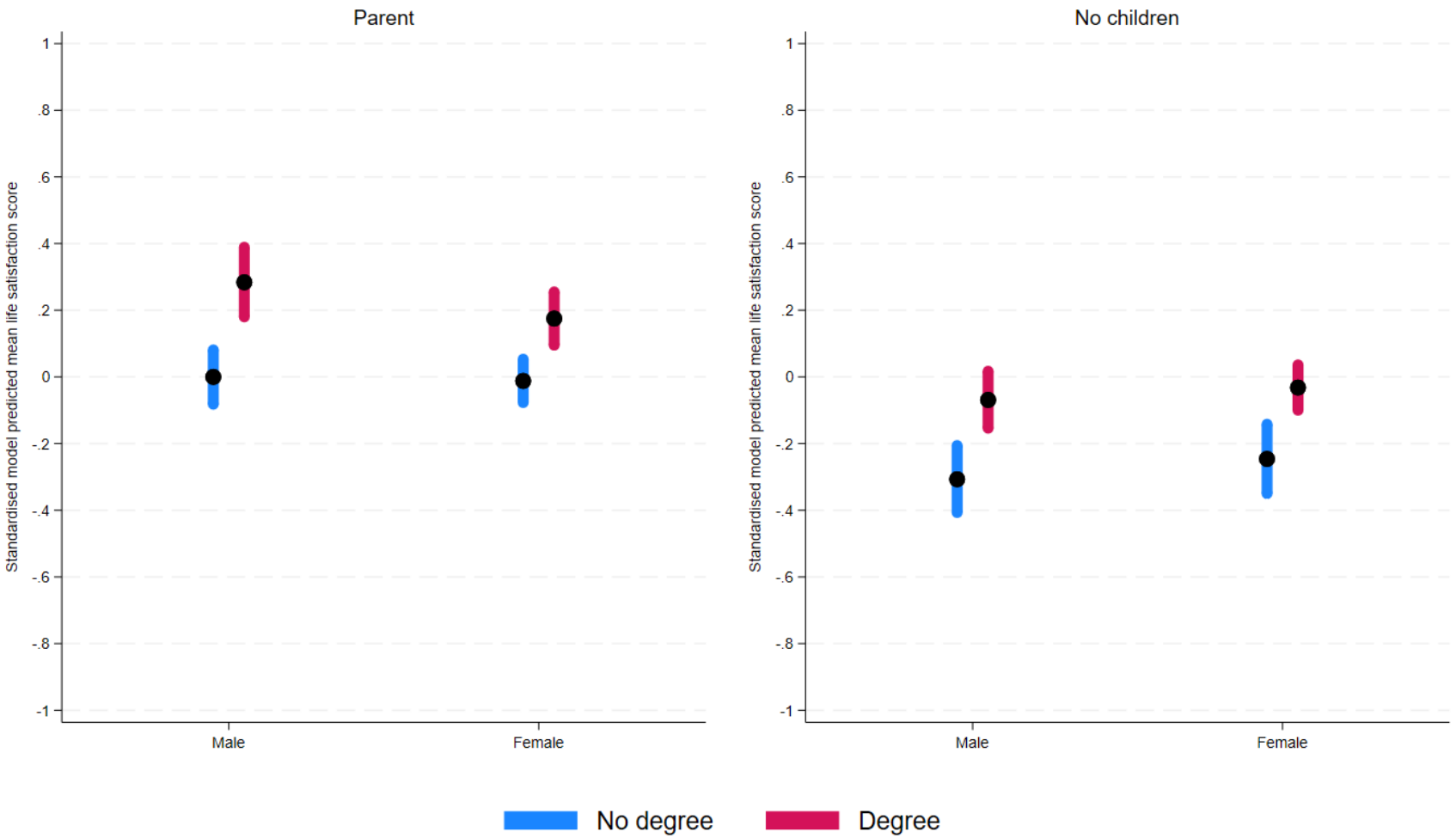
c.


Parent
No children
Standardised model predicted mean life satisfaction score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
Cohabiting partner
No cohabiting partner

d.


Parent
No children
Standardised model predicted mean life satisfaction score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
Both employed
One person employed
Neither person employed

e.


Parent
No children
Standardised model predicted mean life satisfaction score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
No degree
Degree

f.

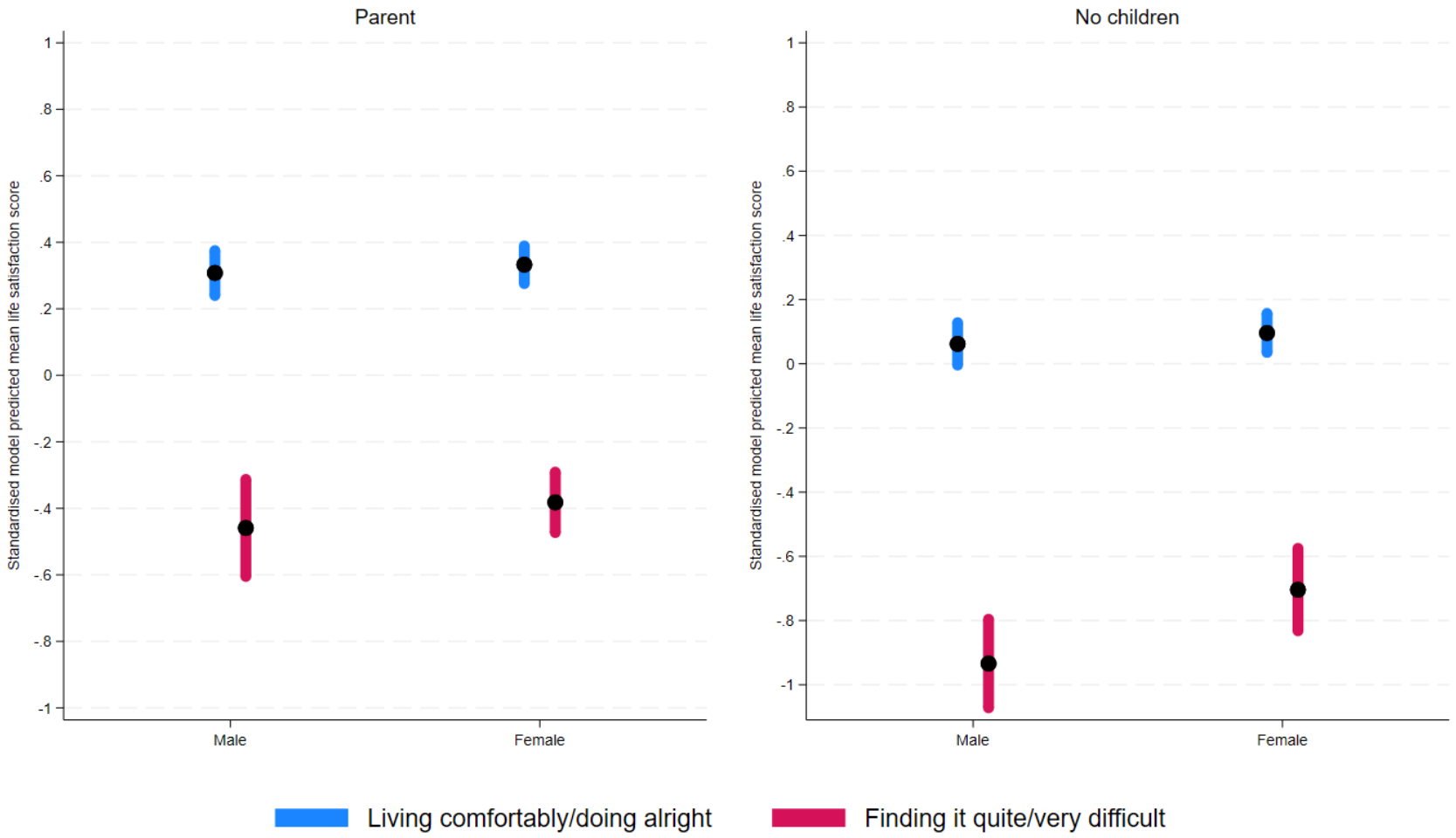

Parent
No children
Standardised model predicted mean life satisfaction score
1
.8
.6
.4
.2
0
-.2
-.4
-.6
-.8
-1
Male
Female
Living comfortably/doing alright
Finding it quite/very difficult

Figure S3. *Margins plots presenting adjusted (age 15 characteristics only) model predicted psychological distress (left) and life satisfaction (right) mean scores for parents by number of children (N = 3,592)*