The Division of Mental Labour in Parents and Childfree Couples

Abstract

Imbalances between men and women in the division of household labour have been well documented, but the inclusion of the mental aspects of this labour are still under-researched. This study aimed to quantitatively measure mental labour experienced by men and women in heterosexual relationships. It was hypothesised that in relationships without children, mental labour would be equally shared, whereas a discrepancy would be present in the relationships of parents. The data provided evidence that sex was a significant determinant of mental labour, with women reporting performing more than men. There was no main effect of parent-status, and no interaction between sex and parent-status. The significant difference in mental load scores of men and women remained even when controlled for hours spent in paid employment. Implications of the findings are discussed, and opportunities for further study are suggested.

Introduction

The gendered division of unpaid labour has been the focus of study for many decades (see Coltrane, 2000; Lachance-Grzela & Bouchard, 2010), but only recently has attention turned to the *mental* labour involved in running a family household. This aspect of domestic work remains under-researched however. While many studies have reported a narrowing gender gap in domestic labour contributions due to men's increased participation (Coltrane, 2000), without considering the cognitive element, the gap is likely an underestimation (Daminger, 2019). This continued and

pervasive inequity disproportionately impacts women by affecting well-being, productivity, and societal dynamics (Shelton & John, 1996). Further study is required to increase awareness, provide couples with the vocabulary necessary to share their experiences, and invigorate efforts for equality.

Managing a household involves a cognitive aspect that has been overlooked in the past. This concept, increasingly referred to in the literature as *mental labour*, makes up part of the domestic workload, but is separate and distinct from physical chores. Following a literature review, Reich-Stiebert et al. (2023, p.485-486) propose the following definition of mental labour: “cognitive work that consists of managerial activities aimed at achieving communal goals, which are directed toward a future outcome and goes undetected and unseen as a component of unpaid work.” Based on her interviews with 35 couples, Daminger (2019) proposes that these managerial activities fit into four stages (anticipating needs, identifying options, making decisions, monitoring progress) and across nine domains (food, childcare, logistics/scheduling, cleaning/laundry, finances, social relationships, shopping/purchasing, home/car maintenance, and travel/leisure). These tasks have a number of defining characteristics; where physical tasks are visible, bound by place (i.e., can only be done whilst at home) and can usually be “ticked off” the to-do list, mental labour is invisible, boundaryless and enduring (Dean et al., 2021). Because of these unique features, cognitive work is less easily outsourced and delegated than physical work (Hjálmsdóttir & Bjarnadóttir, 2020), and harder to quantify.

The term *mental load* is commonly used in mainstream media, but it is not synonymous with *mental labour*. Although Dean et al. (2021) posit that the mental load is the combination of mental labour and the related emotional labour, Reich-Stiebert et al. (2023) exclude the emotional aspect from their definition of mental labour. They also clarify the meaning of the term mental load, stating that it is often used interchangeably with the more widely-used and accepted psychological concept of *cognitive load,* referring to the overload of the limited working memory that negatively impacts task performance. In this paper therefore, mental load will be used to refer to a result of excessive mental labour, and the strain experienced as a consequence of cognitive demands.

Other researchers have also incorporated emotional labour into their definitions of mental labour. Robertson et al. (2019) include *self-regulation* and Walzer (1996) includes *worrying* as part of their definitions. Seemingly, the distinction between mental and emotional labour is not as clear as between visible and invisible work. Physical tasks do not implicitly have an emotional element attached, whereas mental work may. For example, when choosing a school, a parent might experience anxiety and pressure to make the best decision for the child's future. Further contributing to the blurred boundaries between cognitive and emotional labour is the fact that experiencing emotion can expend cognitive resources (Deveney & Pizzagalli, 2008). Despite being admittedly interrelated (Pessoa, 2008), this research will disregard the emotional aspect of invisible labour, and Daminger's (2019) framework, which excludes emotion work, will be used for operationalising mental labour.

Understanding how mental labour is distributed between partners is crucial because domestic labour inequities have a disproportionately negative impact on women. After a review of the literature, Ervin et al. (2022) found that unpaid labour is negatively associated with women's mental health. While many of the studies they reviewed focused on physical aspects, some researchers are considering the impacts of cognitive work on well-being. Mental labour has been described as particularly exhausting, frustrating and energy-consuming (Haupt & Gelbgiser, 2022; DeGroot & Vik, 2020), while feeling disproportionately responsible for the family causes stress and frustration (Hjálmsdóttir & Bjarnadóttir, 2020), and puts a strain on a mother’s well-being (Ciciolla & Luthar, 2019). Multitasking is associated with an increase in negative emotions, stress, and distress (Offer & Schneider, 2011) while decision-making reduces self-control and depletes energy more so than implementing choices made by others (Vohs et al., 2008; Wang et al, 2010). Evidently, when one partner is disproportionately responsible for mental labour, their well-being is negatively affected more than if the responsibility is shared.

The mental load can also take its toll on relationships. Imbalance of responsibility can result in lower sexual desire for women (Harris et al., 2022) while perceptions of unfairness can decrease women’s marital quality (Frisco & Williams, 2003). Goldschedier et al. (2015) suggest that, when men are not involved in the home, relationship dissolution and low fertility levels ensue. Daminger (2019) explains that the invisible nature of mental labour means that its performance goes unnoticed, even by the doer. This can then lead to conflict because the mental labourer cannot articulate the effort expended, credit themselves accordingly or advocate for equality. It can be unclear as to which partner owes gratitude to the other and for what,

leading to feelings of unappreciation and misunderstanding about feelings of stress. This highlights the need to raise awareness of the issue.

On a wider scale, evidence also suggests that shouldering responsibilities at home are preventing women from participating in other societal domains such as politics (Weeks, 2022), and sports and leisure (Shaw, 2008). Ferrant et al. (2014) provide evidence that inequalities in unpaid care work are linked to gender gaps in workforce participation and wages. They also lead to an increased likelihood of women engaging in part-time work, more vulnerable employment, choosing jobs below their skill level and accepting poorer conditions. The anticipation of becoming a mother can affect a woman's career choices (Bass, 2014), not surprising when young women may witness the work-family conflict experienced by many mothers (Offer & Schneider, 2011; Haupt & Gelbgiser, 2022) due to the enduring and boundaryless nature of mental labour. Despite these findings, Samtleben and Müller (2022) argue that it is housework that constrains labour market participation more so than care obligations. This implies sharing physical chores is crucial for women's access to the paid workforce, although this study only measured hours spent on these tasks and did not consider cognitive efforts involved. Acknowledging the mental aspect may reveal more pervasive effects.

This evidence hints at the importance of deepening understanding of mental labour, how it is shared, and potential mediating factors in any adverse effects. Some research suggests that an unequal division of household tasks does not necessarily contribute to marital dissatisfaction (Kluwer et al., 2002). The invisibility of mental work makes it particularly problematic, and couples may find it difficult to understand

or articulate their feelings on the situation. Interestingly, Mederer (1993) found that perceptions of unfairness were predicted by both task (physical tasks) and management (cognitive tasks) allocation, but conflict was predicted only by task allocation. This suggests that couples, although they may feel cognitive labour is not shared fairly, do not argue about the imbalance, maybe because of its invisible nature. Robertson et al.'s (2019) interviews revealed that this invisibility led to 'confusion and distress around self-evaluation, difficulty justifying oneself to a partner, and trouble sharing mental labour responsibilities with someone else'. The fact that fathers receive more recognition for family involvement because it is naturally expected from mothers (Coltrane, 1989) may also increase feelings of resentment. Furthermore, mental work is boundaryless and enduring (Dean et al., 2021). That is, it continues regardless of time or place, cannot be paused and is never ending, making it particularly tiresome. The need for validation can be realised with an increased awareness of mental labour.

Dividing mental labour fairly may yield potential benefits for both partners. Being responsible for various household decisions presents an opportunity for control (Miller, 2018). One may presume therefore, that not being involved in mental work may result in feelings of lack of control. Yogev and Brett (1985) found that men report more marital satisfaction when they do their fair share of physical tasks. It could then be assumed that this extends to mental labour as well. In support of this, Ciciolla and Luthar (2019) found a negative correlation between managing finances and adjustment. A better understanding of mental labour is a key step in allowing both partners to achieve relationship satisfaction brought about by sharing household responsibilities equally.

Previous research provides inconclusive evidence about whether women perform more mental labour. Qualitative studies commonly highlight a disparity between the mental labour responsibilities of partners in heterosexual relationships. In DeGroot and Vik's (2019) study, the mothers who responded to the open-ended questions claimed to bear more responsibility for invisible labour than their partner. The definition of invisible labour in this study, however, included physical and emotional, as well as mental tasks. Daminger's (2019) interviews of married parents revealed women do more anticipating, identifying options, and monitoring, but decision-making is often more equally shared. She also noted that of the nine household domains, men are more likely to share equal responsibility for finances than any other domain. It appears from these and similar results (Christopher, 2020; Forssén & Carlstedt, 2008; Zimmerman et al., 2002) that both partners commonly perceive that women take on more mental labour.

Quantitative findings have been less consistent. Lee and Waite (2005) found that mothers only spend one hour more per week than fathers thinking about household labour, based on the Experience Sampling Method (ESM) which asks a participant what they are thinking about at various points throughout the day. Winkler and Ireland (2009), using data from the American Time Use Survey (ATUS), determined that adults engage in 1.5 hours per week in management activities and that it is more equally distributed among spouses than time spent on other household jobs. The ATUS only elicited information about primary activities however, meaning that mental labour undertaken concurrently would go unreported. Offer and Schneider (2011) found that mothers multitask more than fathers, thus supporting the fact that Winkler

and Ireland's figure may be an underestimation. These results suggest that time-use surveys and ESM are not effective for accurately measuring mental labour quantitatively.

These data collection methods are not well-suited to measuring cognitive labour. Its invisible nature means that it often goes unnoticed, even by the person performing it. The time spent on activities such as 'remembering' or 'noticing' may be negligible compared to the time spent on cleaning, but the cognitive effort involved in such mental tasks are significant. Inaccurate reporting also affects studies which employ these data collection methods. Women report time spent on tasks more accurately (Lareau, 2003), however neither men or women accurately report the time their partners spend on tasks (Berk & Shih,1980). To produce accurate, reliable results, time-use surveys and the ESM require a level of metacognition not available to the average survey participant.

Other quantitative data collection methods have also produced results in contrast to the qualitative findings. Treas and Tai (2012), using data from parents' survey responses, concluded that decision-making in three domains (child rearing, weekend activities and major purchases) were mostly shared by mothers and fathers. Although suggesting equity, this supports Daminger's (2019) finding that men *are* more involved in the decision-making process, but that this represents only one aspect of mental labour, and arguably the step linked most closely to power and influence. Offer's (2014) wider conceptualisation includes planning, organisation and management of everyday activities, yet her findings, based on parents' diary data collection, revealed only a small discrepancy between time mothers and fathers

spend on cognitive activities. In their 2019 study, Ciciolla and Luthar used the same three domains as Treas and Tai (2012) but included more detailed questions that covered more elements than simply decision-making. As a result, they found that women shared more responsibility in the childcare and household routine domains, but that responsibility for finances was more equally shared, supporting Daminger's qualitative findings. Finally, Weeks (2022), using her measurement tool based on Daminger's stages and domains, found that mothers were responsible for 70% of cognitive labour. The inconsistencies of these quantitative results highlight the importance of using a common, comprehensive conceptualisation for mental labour.

To summarise, although qualitative studies report that women take on more mental labour, this is not supported by quantitative findings. This may be due to inconsistent application of mental labour definitions and inappropriate methodology. This study aims to contribute to the literature by quantitatively measuring mental labour, using the most up-to-date conceptual framework, with sex as an independent variable, to accurately measure potential gaps.

Previous research is largely based on parent samples. Understanding the division of mental labour in childfree couples is also important as some studies suggest that the negative effects are not just limited to mothers (Frisco & Williams, 2003; Haupt & Gelbgiser, 2022). There is currently no data on how mental labour is shared between childfree couples, however some researchers have reported through qualitative methods, that the division of household labour becomes more pronounced after a couple have children (Faircloth, 2021; Rehel, 2014; Walzer, 1996). This disparity persists despite parental intentions (Faircloth, 2021; Miller, 2018; Zimmerman et al.,

2002), an egalitarian ideology (Evertsson, 2014) and opportunities for equal parental leave (Miller, 2018). Although mental labour data is not available for childfree partners, these studies suggest division of labour changes with parenthood.

Because mothers are more likely to take longer parental leave, even in countries where fathers are entitled to an equal share, women end up spending far more time in the home, becoming experts in this domain (Ciciolla & Luthar, 2019; Robertson et al., 2019). Transferring these competencies to a partner who spends more time in paid employment is inefficient, and therefore limited attempts may be made. In support of this theory, Rehel (2014) found that, when men are more involved in childcare from birth, they are more confident and skilled, thus becoming more able to share responsibility more equally. It is expected therefore, that in childfree couples, mental labour will be equally shared, and that for parents, the mental load will be shouldered more by the mother. By including parent-status as a second independent variable, this study aims to reveal differences between parents and childfree couples.

Given that time-use surveys and the ESM are unsuitable for measuring mental labour, this study also aims to provide quantitative data on the division of mental labour using a more reliable measurement tool. Weeks' (2022) Task-Based Measure of the Mental Load (TBMML) is based on Daminger's (2019) framework, and asks participants about who is responsible for each stage of the mental process across different domestic domains. The TBBML is a recent development, meaning that it is based on an up-to-date understanding of mental labour, and was found to have an excellent level of internal consistency.

There are three theoretical viewpoints proposed explaining the continued gender gap in domestic labour. The relative resources theory states that the partner who contributes the most resources to the relationship (usually financial) has the power to opt out of undesirable domestic tasks (Lundberg & Pollack, 1996). Second, Greenstein (2000) proposes that the partner undertaking more hours of paid employment performs less unpaid work. Finally, the gender ideology approach suggests that it is attitudes around gender that influence the distribution of tasks within the home (Bianchi et al, 2000). Although these theories have not been discussed extensively in the context of mental labour, by considering hours in paid employment, this study aims to reveal evidence in support of the time availability theory by introducing time in paid employment as a covariate. Because mothers tend to reduce their work hours on becoming parents, it is important to check that any differences in mental labour are not due to fewer hours in paid employment. Craig and Mullan (2011) found that mothers' responsibilities remain consistent despite their differing work commitments, but these findings varied from country to country. Craig and Churchill (2021) found that even when both partners were at home, relative divisions of household labour remained wide, and women still bore the major load. To further explore this, a statistical analysis will be performed to see if any effects remain after controlling for time spent in paid employment.

Hypotheses:

The aim of this study is to find quantitative evidence in support of the differences between men and women in their undertaking of mental labour as reported by Daminger (2019), DeGroot and Vik (2020), and Robertson et al. (2019).

Furthermore, it aims to address the gap in the literature regarding childfree couples by comparing the experiences of parents and non-parents.

There will be a significant main effect of sex on mental labour where it is anticipated that women will score higher on mental labour than men.

There will be a significant main effect of parental status on mental labour where it is anticipated that parents with children will score higher on mental labour than parents with no children.

There will be a significant interaction effect between sex and parental status on mental labour where it is expected that women with children will score higher on mental labour than women with no children. Similarly, men with children will score higher on mental labour than men with no children.

Method

Design

To test the above hypotheses, an independent measures study was designed to find out about the mental labour experienced by individuals in heterosexual cohabiting relationships. It involved an online questionnaire to collect data for two categorical independent variables (sex and parental status) and the dependent variable (mental labour).

Participants

A GPower calculation suggested a sample of 128 participants, with a medium effect size, 0.80 power, and significance level set at 0.05. Once participants in same-sex relationships were removed, the final sample size was N=124 (37 male). There was an almost equal representation of childfree respondents (44%) and parents (56%). Almost half (43.5%) the participants fell in the 35-44 age bracket. Most participants described themselves as white/Caucasian (86%) and were university educated (77% had at least an undergraduate degree). Additionally, 85% of participants were employed (mean hours in paid employment =31.8, SD=16). Demographic information is detailed in Appendix A.

Participants were recruited online through web and social media platforms. The study was advertised on the researcher's Facebook page and shared on relevant group pages, subject to permissions. A link was posted in Microsoft Teams for the MSc Psychology program, and the study was shared in the University's Research Participation Scheme (RPS). No incentives were provided.

Recruitment information stated participants had to be 18 years of age or older and in a cohabiting relationship. They had to confirm that they did not have any mental health conditions or suffering from any brain injuries.

Materials

The questionnaire was administered via Qualtrics and began with several demographic questions, including age, sex, relationship length, the number of children in the household, and hours spent in paid work. Subsequent questions

consisted of those derived from the Task-Based Measure of the Mental Load (TBMML; Weeks, 2022).

The TBMML (Appendix B) comprises 21 questions across seven domains, such as cleaning, finances, and home maintenance. In each domain, three statements were presented (e.g., keeping track of which groceries need to be purchased), and participants had to respond to the question, "In your household, who typically does the following?". The response options included "Mostly me," "Mostly my partner," "Partner and I share equally," "Someone else (Includes friends and family)," and "N/A." A mental load score could then be calculated by adding up the number of items to which they answered "Mostly me" and dividing this by the total number of items (minus items that respondents indicated as N/A). A higher score indicated that an individual took on a greater proportion of mental labour in their relationship.

Some adaptations were made to Weeks' (2022) scale to increase its relevance. Firstly, references to tasks related to children (in domains other than childcare) were revised. For instance, under cleaning, the statement that originally read, "Cleaning out kids' clothes that no longer fit," was changed to "Cleaning out clothes that are no longer needed." This modification allowed non-parents to answer the question without selecting the "not applicable" option. Without these changes, too many questions would have resulted in a N/A response from childfree participants. Additionally, the domain related to work performed during the COVID lockdown was removed since partnerships formed after the pandemic would not be able to respond to these questions. Cronbach's Alpha was calculated to check the scale reliability

after these adjustments were made. The value was α= 0.66, demonstrating a reasonable level of internal consistency.

Procedure

Participants for the study were recruited through various web platforms (see Appendix C for invitation to participate). Posts were aimed at interest groups relevant to the target population (over 18s who were cohabiting with their romantic partner). The survey was also posted on University platforms such as Microsoft Teams and the Research Participation Scheme. A web link was provided, leading potential participants to a Qualtrics page. Before being presented with the questions, participants were provided with information about the study (Appendix D). This text provided information about how the study was conducted in accordance with GDPR and BPS (British Psychological Society) (2018) Code of ethics.

Upon deciding to participate, respondents were directed to the consent form (Appendix E). On this page, they had to check the appropriate boxes to confirm that they had read and understood the provided information and met the inclusion criteria for the study, which included being over 18, agreeing to participate, and understanding how their data would be used. Participants could not proceed without checking all the relevant boxes. Subsequently, they were directed to the survey questions, starting with demographic information, followed by the statements regarding mental labour.

After completing the questions, participants were presented with debrief information (Appendix F). This document contained information about the study's purpose, their

right to withdraw, and instructions on how to do so. It also provided guidance on where to seek support if they had experienced any negative effects as a result of participation in the study. There was also a final opportunity to revoke consent.

Analytic procedure

A 2 (sex) x 2 (parent-status) ANOVA was performed, and two main effects and an interaction effect was reported. Subsequently an ANCOVA was performed to find out if these effects remained after controlling for time spent in paid employment.

Results

Data was first screened for normality. Box plots identified four outliers, although none were extreme. These participants' responses were checked and not deemed to be irregular, and were therefore included in the analysis. All skewness and kurtosis z-scores fell within the +/-1.96 range necessary to meet assumptions of normality (see Appendix G). The Shapiro-Wilks normality test is recommended for groups with fewer than 50 participants. For three of the four conditions, the Shapiro-Wilks significance values were greater than 5% ($p > .05$) meaning that this data met normality assumptions. The only exception to this were the mental labour scores for childfree females. However, the factorial ANOVA is considered robust enough to deal with such violations in sample sizes such as this (Pallant, 2020). The means, standard deviations and normality checks can be seen in Table 1. The normal Q-Q plot of standardised residuals showed points that were close to the line, indicating that the data contained approximately normally distributed errors (see Appendix H). All data satisfied the assumption of homogeneity of variance as confirmed by Levene's Test (Appendix I).

Table 1

Means (M), standard deviations (SD), 95% confidence intervals (CI), skewness and kurtosis with standard errors (SE) for Mental Load scores, by sex and parent-status

Variables	M	SD	95% CI Lower/Upper	Skewness (SE)	Kurtosis (SE)	S-W test	N
Female childfree	0.51	0.25	(0.42, 0.6)	0.42 (0.4)	-1.06 (0.78)	0.03	35
Male childfree	0.38	0.22	(0.28, 0.48)	0.49 (0.51)	1.19 (0.99)	0.5	20
Female parent	0.65	0.2	(0.59, 0.7)	-0.22 (0.33)	0.07 (0.65)	0.23	52
Male parent	0.38	0.27	(0.24, 0.51)	0.61 (0.55)	0.50 (1.06)	0.64	17

A factorial independent measures design was used to examine the effect of sex and parent-status on mental labour. Data were analysed using a 2 (sex) × 2 (parent-status) ANOVA. Simple main effects and the interaction effect between sex and parent-status on mental labour was examined. The mean mental labour (ML) scores for each condition is shown in Table 3. There was a significant main effect of sex ($F(1, 120) = 19.491$, $p = <0.001$, partial $\eta 2 = 0.14$) indicating that 14% of the variance in ML score can be accounted for by sex. There was however no significant main effect of parent-status ($F(1, 120) = 2.236$, $p = 0.137$, partial $\eta 2 = 0.108$). Neither was there a significant interaction of sex and parent-status ($F(1, 120) = 2.354$, $p = 0.128$, partial $\eta 2 = 0.019$). See Appendix J for between-subjects effects table.

Table 2

Observed mean mental load scores (with standard deviations) and adjusted means (with standard errors) for each group

	Childfree		Parent		Total	
	Observed Mean	Adjusted Mean	Observed Mean	Adjusted Mean	Observed Mean	Adjusted Mean
Female	0.51 (0.25)	0.50 (0.04)	0.65 (0.20)	0.64 (0.03)	0.59 (0.23)	0.57 (0.03)
Male	0.38 (0.22)	0.39 (0.05)	0.38 (0.27)	0.40 (0.06)	0.38 (0.24)	0.39 (0.04)
Total	0.46 (0.25)	0.44 (0.03)	0.58 (0.25)	0.52 (0.03)		

To perform an ANCOVA with hours in paid employment as a covariate, normality checks were undertaken on the residuals. Z scores showed negative skewness and kurtosis. The data was transformed using log10 with a reflection because of the negative skewness (LG10(maximum value +1 - hours worked). After the transformation, skewness z scores fell within the +/-1.96 range except for male childfree and female parents, while kurtosis fell within the accepted range for all groups except female parents. A Shapiro-Wilk test still failed to show normality. The data met the assumption for homogeneity of variance but was in violation of the assumption of homogeneity of regression. The ANCOVA was performed with this transformed data as planned given its robust nature.

An ANCOVA was then conducted to determine a statistically significant difference between sex and parent-status on ML scores controlling for hours spent in paid employment. The adjusted mean ML scores for each condition is shown in Table 2 (See Appendix K for output). A significant main effect between the ML scores of men and women remained after controlling for paid employment, ($F (1, 119) = 16.19$, $p = < 0.001$, partial $\eta 2 = 0.12$) Between subject test effects output can be seen in

Appendix L). This suggests women still perform more mental labour, even when working the same hours as men.

Discussion

The aim of this investigation was to examine the mental labour experienced by cohabiting couples with and without children. It was hypothesised that couples without children would share mental labour equally, whereas for parents, women would take on more mental labour than men. There was a main effect of sex, supporting the hypothesis that sex was a significant determinant of mental labour, but no main effect of parent-status. There was also no interaction between sex and parent-status. The significant difference in mental labour (ML) scores of men and women remained even when controlled for hours spent in paid employment.

This difference in ML for men and women supports the conclusions in past qualitative studies (Christopher, 2020; Daminger, 2019; DeGroot & Vik, 2019; Forssén & Carlstedt, 2008; Zimmerman et al., 2002) that found women shoulder the burden of mental labour. This study further contributes to the literature however by providing quantitative evidence from a larger sample size, using a measurement scale based on an up-to-date comprehensive conceptualisation of mental labour. Consequently, the findings presented here show a greater discrepancy in ML scores between men and women than in quantitative studies (Offer, 2014; Treas & Tai, 2012) which used a narrower definition of mental labour. The results also differ from those of Lee and Waite (2005) and Winkler and Ireland (2009), suggesting that the Weeks (2022) TBMML is a more valid method of measuring the concept than ESM and time-use surveys. The respective ML scores for men and women differed from

those reported in Weeks' much larger study, however this is likely to be because the sample for this study included non-parent participants. The ML scores of the parent groups were similar to Weeks' findings.

The significant difference in ML scores for men and women remained even when time spent in paid employment was controlled. This evidence does not support the time availability theory (Greenstein, 2000) as it suggests that women perform more mental labour regardless of hours in paid employment. It does however support the studies that found mothers' responsibilities remain constant regardless of their or their partners' work commitments (Craig & Churchill, 2021; Craig & Mullan, 2011).

Parent-status was not found to significantly affect mental labour. ML scores for male parents and non-parents were very similar, whereas there were differences between ML scores for female parents and non-parents (see Appendix M). These differences were not significant enough to result in an interaction effect however. This data suggests that the division of mental labour becomes more pronounced for men and women in parenthood (Faircloth, 2021; Rehel, 2014; Walzer, 1996) but further research is required with larger and more equal group sizes in order to support this hypothesis.

Despite not being significant, the ANCOVA results suggest an interesting relationship which warrants further investigation with larger sample sizes. It appears that for childfree couples, both mental labour and time in paid employment are more equally shared, although slightly more mental labour is undertaken by women, and slightly more paid labour is performed by men. This could support the time availability theory

(Greenstein, 2000), which proposes that the partner who engages in more paid labour performs less unpaid labour, but the direction of causation remains unclear. It is possible that women's paid opportunities are restricted by their household responsibilities. In this case, it would actually support the gender ideology theory (Bianchi et al., 2000) which posits that differences in labour division are due to beliefs about the work that should be done by men and women respectively. The measurement of mental labour should continue indefinitely to record trends in how it is divided in heterosexual couples.

For parents, the mental labour and paid employment gaps are larger, with women undertaking more mental labour and men more paid employment. This indicates a shift in responsibility on becoming parents; men may need to increase work hours to make up for a decrease in the female partner's income. Accordingly, with the male partner spending less time at home, the female partner is required to undertake more work in this domain. This data provides support for the qualitative findings of Faircloth (2021), Miller (2018), Rehel (2014), Walzer (1996) and Zimmerman et al. (2002), who all reported increases in maternal responsibilities on the arrival of children. Although this appears to support the time availability theory (Greenstein, 2000), the full picture is likely to be more complex than this, with gender ideology undoubtedly playing a role.

These findings also provide evidence for Robertson et al.'s (2019) claim that the knowledge women accrue during time spent in the home with the family leads to the acquisition of expert status, and consequently more mental labour. These developments may not be explicitly discussed or agreed, but are likely due to

parental leave choices. In fact, even couples who intended to share household management equally end up reverting to traditional sex roles (Faircloth, 2021; Zimmerman et al. 2002). Further research in countries where parental leave is more fairly shared can reveal more information about how it ultimately affects mental labour division.

Although it may seem logical and fair for one partner to take on more unpaid work while the other takes on more paid work, it is important to understand that they may not be cognitively equivalent. Feelings of unfairness may emerge due to the lack of value placed on household labour by society; the fact that it is unpaid and unrecognised devalues its worth (Luxton, 1997). Although there is plenty to incentivise women to join the paid workforce, there is little to motivate men to do more at home (England, 2010). Furthermore, the emotional aspect of looking after the family, which was largely disregarded in this study, still plays an important role and takes a cognitive toll (Hjálmsdóttir & Bjarnadóttir, 2020), as does the enduring and boundaryless nature of mental labour. On the other hand, this type of work may provide more feelings of fulfilment than paid employment, so it is important for partners to find balance so that both can benefit accordingly. Because of these differences, it is vitally important to recognise the contributions women make to society in the form of household management.

Despite its contributions to the literature, there are a few limitations to consider. The sample sizes for each group were unequal, with small numbers of men taking part, although the variance of the data did not violate the guidelines. The residuals for working hours however were in violation of a number of the assumptions necessary

to perform an ANCOVA. The findings must therefore be interpreted with caution and further study is required. There are also limitations with self-reporting questionnaires. It is well-documented that neither men and women accurately report their own or others' contributions (Berk & Shih, 1980; Lareau, 2003; Lee & Waite, 2005), and this is likely to be even more problematic for such an abstract concept as mental labour. It is even more difficult to know the cognitive efforts of a partner, potentially resulting in inaccurate reporting.

Future studies need to direct attention to refining measurement tools for mental labour to report patterns in wider populations; more culturally diverse populations and individuals of all genders, experiencing diverse living arrangements. These tools should also attempt to operationalise the effort involved in different tasks. Analysing additional variables, such as relative income, parental leave arrangements and gender ideologies, would also help reveal the reasons behind disparities. Same-sex couples are currently under-represented in the literature, but are an important piece of the picture. By investigating mental labour sharing in such relationships, sex differences are removed as a variable and other factors can be considered. Longitudinal quantitative studies would highlight changes to the workload across the transition to parenthood. Considering mental labour in countries with different social provisions such as parental leave and universal pay may shed light on ways to address inequities. Research into mental labour is very much in its infancy and there are extensive opportunities for further study.

This study was the first to use Daminger's (2019) concept of mental labour to quantitatively measure the experiences of male and female parents and non-parents.

The findings provide support for the hypothesis that women perform more mental labour, regardless of whether they have children. Parenthood did not affect the mental labour performed by men. Despite an underrepresentation in the literature, it is important however to consider mental labour experienced by all genders and all relationships to avoid the negative consequences. A perception of overload or unfairness in the division of labour, could lead to relationship dissolution, reluctance to have children or an inability to make meaningful contributions to society. By increasing awareness of the disparity in effort expended within partnerships, it is hoped that couples can improve communication of their invisible experiences, address inequities, and thus enable women to free up cognitive resources for other concerns such as careers and leisure activities, which have a positive impact on well-being.

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Appendix A

Table showing Sociodemographic Characteristics of Participants

		Childfree		Parent		Total	
		n	%	*n*	%	*n*	%
Gender							
	Female	35	28.2	52	41.9	87	70.2
	Male	20	16.1	17	13.7	37	29.8
		55	44.4	69	55.6	124	100.0
Ethnicity							
	White/Caucasian	47	37.9	59	47.6	106	85.5
	Asian/Pacific Islander	5	4.0	4	3.2	9	7.3
	Multiple ethnicity/other	2	1.6	3	2.4	5	4.0
	American Indian/Alaskan Native	0	0.0	1	0.8	1	0.8
	Hispanic	0	0.0	1	0.8	1	0.8
	No data	1	0.8	1	0.8	2	1.6
Education							
	No high school qualifications	0	0.0	1	0.8	1	0.8
	High school qualification	5	4.0	1	0.8	6	4.8
	Post secondary qualifications	12	9.7	8	6.5	20	16.1
	Undergraduate degree	18	14.5	25	20.2	43	34.7
	Post graduate degree	19	15.3	32	25.8	51	41.1
	Doctoral degree	0	0.0	2	1.6	2	1.6
	No data	1	0.8	0	0.0	1	0.8
Employment status							
	No paid employment	4	3.2	6	4.8	10	8.1
	Part time	8	6.5	19	15.3	27	21.8
	Full time	37	29.8	42	33.9	79	63.7
	Retired	5	4.0	0	0.0	5	4.0
	Other	1	0.8	2	1.6	3	2.4
Age							

18-24	4	3.2	1	0.8	5	4.0
25-34	14	11.3	15	12.1	29	23.4
35-44	23	18.5	31	25.0	54	43.5
45-54	3	2.4	19	15.3	22	17.7
55-64	6	4.8	3	2.4	9	7.3
65+	5	4.0	0	0.0	5	4.0
Personal income						
Below £10,000	5	4.0	9	7.3	14	11.3
£10,000-£24,999	12	9.7	11	8.9	23	18.5
£25,000-£49,999	27	21.8	20	16.1	47	37.9
£50,000-£74,999	8	6.5	17	13.7	25	20.2
75,000-£99,999	1	0.8	3	2.4	3	2.4
£100,000+	2	1.6	6	4.8	7	5.6
No data	0	0.0	3	2.4	5	4.0
Relationship length						
Less than a year	4	3.2	1	0.8	5	4.0
1-5 years	15	12.1	4	3.2	19	15.3
5-10 years	11	8.9	16	12.9	27	21.8
10-20 years	12	9.7	30	24.2	42	33.9
20-30 years	6	4.8	16	12.9	22	17.7
30-40 years	2	1.6	2	1.6	4	3.2
40 years+	5	4.0	0	0.0	5	4.0

Appendix B

Question Items Composing the Task-Based Measure of the Mental Load

After answering some demographic questions, respondents are told the following:

“Now think about the mental work involved in managing your household. You will see a series of 8 questions which ask about some different aspects of household and care work. Please respond who in your household (yourself or someone else) typically handles this kind of mental work.”

The response options given are: ”Mostly me”, ”Mostly my partner”, ”Partner and I share equally”, ”Someone else (Includes friends and family)”, and ”NA”.

Care for children: In your household, who typically does the following?

• Researching options for new items children need, like school supplies or shoes

• Deciding on a child care provider (e.g., babysitter, daycare, camp)

• Noticing when children’s nails need to be cut

Cleaning: In your household, who typically does the following?

• Keeping track of when sheets and towels need to be washed

• Cleaning out clothes that no longer needed

• Noticing when the house needs to be tidied

Finances: In your household, who typically does the following?

• Researching options for financial products like bank accounts or insurance

• Deciding how to allocate money (such as paying off credit cards or increasing savings)

• Keeping track of household expenses

Food: In your household, who typically does the following?

• Keeping track of which groceries need to be purchased

• Deciding what meals to cook

• Monitoring food for “sell-by” dates, or noticing when foods need to be thrown away

Home maintenance: In your household, who typically does the following?

• Noticing when something like a dishwasher or faucet needs repair

• Booking a repair professional like a plumber or mechanic

• Remembering when items like a boiler or car need servicing

Social relationships: In your household, who typically does the following?

• Finding options for leisure activities

• Coordinating a playdate

• Checking in with family and friends

Scheduling: In your household, who typically does the following?

• Keeping track of the family calendar, such as appointments and engagements

• Planning a family event, like a birthday party

• Remembering to schedule appointments, such as dentist appointments

Appendix C

Invitation to participate

My name is Sarah Plews and I am a student at the University of Derby on the MSc Psychology Programme. I am looking for participants to take part in a study about differences between the division of the mental labour between partners, and whether these discrepancies are different for those with children and those without. This study is being supervised by Bob Simonovic.

Taking part involves an online survey which may last between 20-30 minutes. The survey will take place online at a time to suit you. Your participation will remain confidential and anonymous and is completely voluntary. You may also withdraw from the research after participation. There is no obligation to participate.

To take part you must meet the following criteria:

- You must be over 18
- You must be cohabiting with your romantic partner

You may not take part if you:

- Are under the age of 18
- Are currently suffering from mental health issues
- Have suffered a brain injury

If you would like more information please contact Sarah Plews on s.plews1@unimail.derby.ac.uk or Bob Simonovic (b.simonovic1@derby.ac.uk, 01332 597957).

Appendix D

Participant Information Sheet

Study Title: The Division of Mental Labour in Parents and Childfree Couples

Principal investigator: Sarah Plews (Supervisor: Bob Simonovic)

I would like to invite you to take part in my research study. Before you decide if you would like to consider taking part, I would like you to understand why the research is being done and what it would involve for you. I would be happy to discuss the study with you and answer any questions you have or clarify anything as needed.

What is the purpose of the research?

The purpose of this research is to find out more about the mental labour experienced by individuals in their relationship. The term “mental labour” refers to the work involved in managing and maintaining a relationship/household that may be invisible. Some examples include planning, organising and scheduling. The study is being conducted as part of my studies in psychology at the University of Derby.

Why have I been invited to participate?

You have been invited to participate because you have confirmed that you are currently in a long-term romantic relationship, and that you are cohabiting with your partner. If you are under the age of 18, are suffering from a mental health condition, or have suffered a brain injury, you are unable to take part.

Do I have to take part?

No, it is up to you to decide whether or not to take part. If you decide to participate, you will be asked to keep this information sheet and to complete a consent form, which says you are happy for your responses to be included in the research. If you decide to take part, you are free to withdraw (stop taking part in the study) at any time up to two weeks after submitting your responses and without giving a reason. If you do participate in the study and you change your mind afterwards, you can just contact me and your data along with any information you provided will be destroyed.

To do this you will need to inform me of your unique participant code, which you will be asked to create once you start the study. Make sure you keep a copy of this code. You will be asked to provide the code during the study so that the researcher can easily recognise and withdraw your data.

What will happen to me if I take part?

You will be asked to independently answer some questions via an online survey. There will be some initial demographic questions (e.g. age, gender, ethnicity) followed by some questions about the work you and your partner undertake as part of your relationship. This is an individual task and it will take roughly about 20 – 30 minutes.

What are the possible disadvantages and risks of taking part?

The online survey should take between 20-30 minutes to complete. Physical discomfort is unlikely to occur in this time but please ensure you are in a safe and comfortable environment before commencing.

This survey includes questions of a personal nature. You will be asked about your current relationship, and the mental effort you and your partner contribute. Although unlikely, some survey questions may be emotionally challenging or uncomfortable, which could cause distress or discomfort. If this is the case, you may stop the survey at any time. You may also withdraw your consent to have your answers included in the research up to two weeks after completing the survey. At the end of the survey, contact details for support organisations are provided if required.

What are the possible benefits of taking part?

In some relationships, one partner takes on more mental labour than the other which can lead to stress and conflict. Often this person (and their partner) is unaware of the inequality of the responsibilities because mental labour is invisible. By taking part you will be helping to further understand the concept of mental labour experienced by individuals in their relationships. This research is considered an important step in helping couples communicate discrepancies in their mental loads and subsequently take action to improve equality.

What will happen to the results of the research?

The information you give us will be analysed by the research team and written up into a report; this will form part of the MSc and may consequently be published and presented at academic conferences. In some cases, such as journal article publications, the researchers might be asked to share anonymized data or upload it in databases. Any identifiable information, if available, will be removed from reports and databases.

Who is organising or sponsoring the research?

The present study has not received any research funding. The study is being conducted by Sarah Plews and Bob Simonovic as part of the Masters of Psychology at the University of Derby.

Further information and contact details:

If you have any questions before deciding to participate in this study, please contact us.

Sarah Plews
s.plews1@unimail.derby.ac.uk

Bob Simonovic

b.simonovic1@derby.ac.uk

01332 597957

Thank you for taking the time to read this information sheet.

Appendix E

Consent Form

The Division of Mental Labour in Parents and Childfree Couples

Researcher: Sarah Plews (s.plews1@unimail.derby.ac.uk)
Supervisor: Bob Simonovic (b.simonovic1@derby.ac.uk, 01332 597957)

Thank you for your interest in taking part in this research. In order to take part, you will be required to undertake an online survey.

Anonymous data from the online survey will be used as part of the research findings in the final written report and possibly in publications. There will be no reference to names (if collected) or any identifying details of the participants in the written report. Your decision to participate is completely voluntary and you may withdraw from this research at any point up to two weeks after participation. You do not need to give a reason or explanation for doing so and you will need your unique participant code, that you will be asked to create after you start the study.

Statement of Informed Consent

- I understand that I have agreed to participate in an online survey
- I understand and agree with the Terms and Conditions of third party software or tools used in the process of this research (e.g., Qualtrics, Teams)
- I understand that if, at any time up to two weeks, I decide I no longer wish to take part in this project, I can notify the researcher involved and withdraw immediately.
- I agree that the research project named above has been explained to me to my satisfaction and I have had the opportunity to ask the researcher any questions.
- I understand that anonymous data may be used in the final report and may be published.
-

I have read and understand the above statements and agree to take part in this study.

Please tick to confirm.

Appendix F

DEBRIEF FORM

The Division of Mental Labour in Parents and Childfree Couples

Sarah Plews s.plews1@unimail.derby.ac.uk

Supervisor: Bob Simonovic (b.simonovic1@derby.ac.uk, 01332 597957)

Dear Participant,

Thank you very much for taking part in this research study which explored mental labour in relationships. This study hopes to find out about the links between gender, parental status and mental labour.

I consent for my answers to be used as part of this research. Tick to confirm.

Your decision to participate is completely voluntary and should you wish to withdraw from the research you may do so at any point, up to two weeks after participation. You will not need to give any reason or explanation for doing so. To withdraw your data simply contact the researcher with your unique participant code (the code made up of numbers or letters) on the details below explaining your wish to withdraw.

Should you have any questions about the research please feel free to contact the researcher on the details below. If your participation in the study has raised any issues that you would like to discuss further, you can contact your GP or one of the following support services using the information below:

Samaritans: https://www.samaritans.org/wales/how-we-can-help/contact-samaritan/

The SPARK: https://thespark.org.uk/relationship-support-for-couples-individuals/relationship-helpline/

RELATE: https://www.relate.org.uk/relationship-help

Supportline: https://www.supportline.org.uk/problems/mental-health/

Many thanks,

Sarah Plews

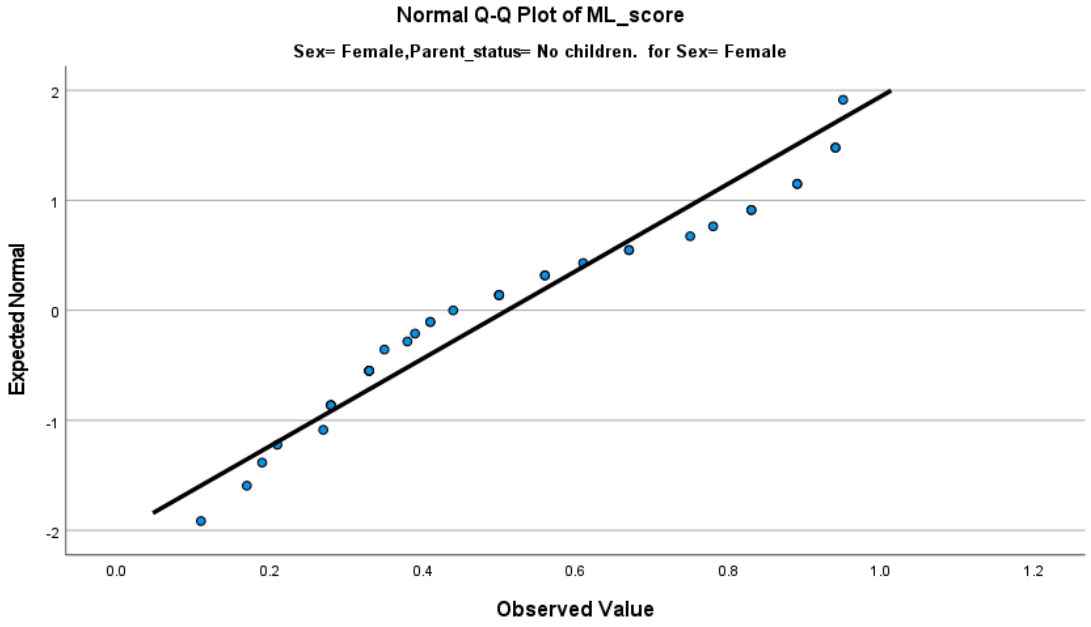
Appendix G

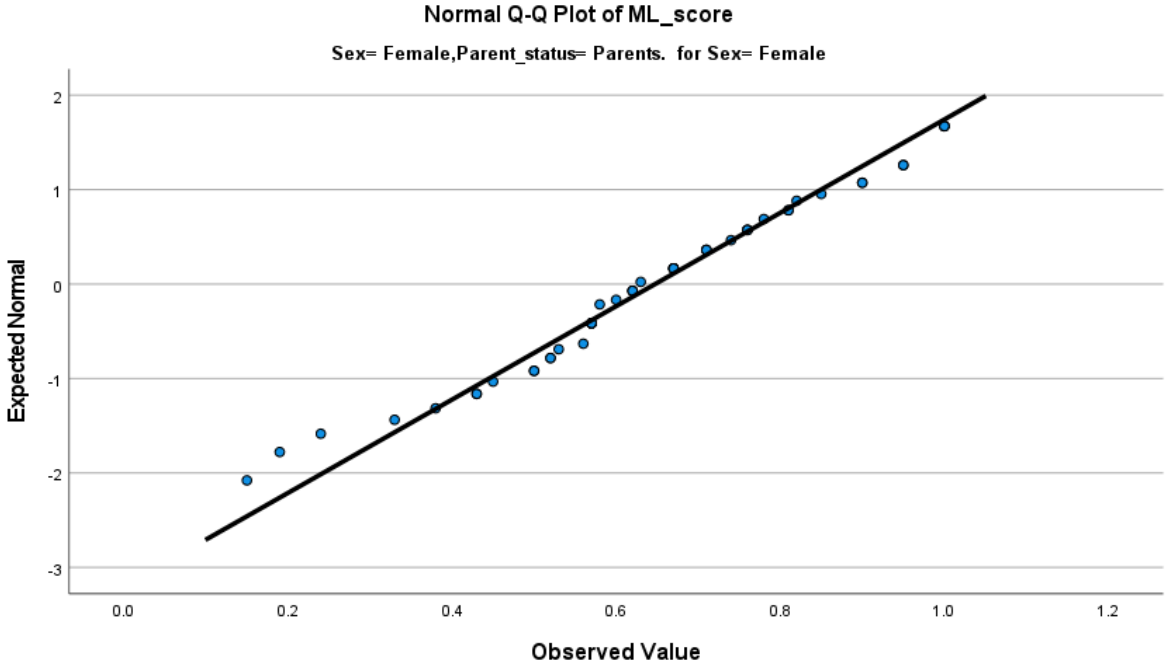
Table showing skewness and kurtosis for each group

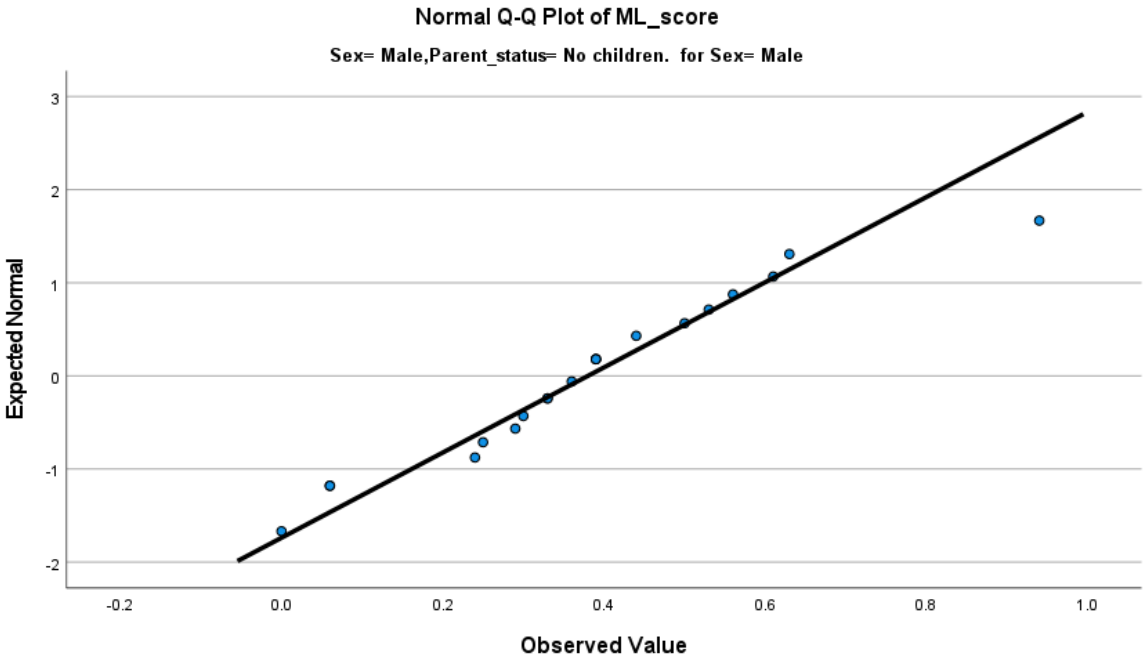
Variables	Skewness	SE	z-score	Kurtosis	SE	z-score
Female childfree	0.42	0.40	1.05	-1.06	0.78	-1.37
Male childfree	0.49	0.51	0.96	1.19	0.99	1.20
Female parent	-0.22	0.33	-0.66	0.07	0.65	0.11
Male parent	0.61	0.55	1.11	0.50	1.06	0.47

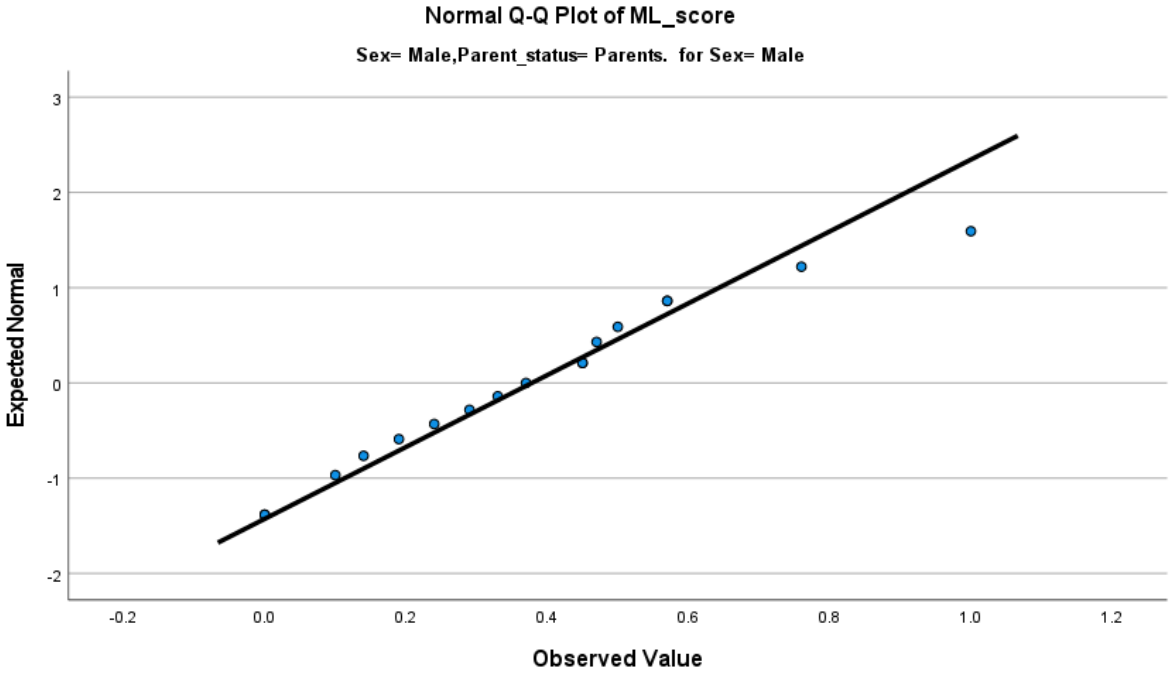
Appendix H

Normal Q-Q plots of standardised residuals






Normal Q-Q Plot of ML_score
Sex= Male,Parent_status= No children. for Sex= Male
Expected Normal
Observed Value
3
2
1
0
-1
-2
-0.2
0.0
0.2
0.4
0.6
0.8
1.0


Normal Q-Q Plot of ML_score
Sex= Male,Parent_status= Parents. for Sex= Male
Expected Normal
Observed Value
3
2
1
0
-1
-2
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2

Appendix I

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
ML_score	Based on Mean	1.565	3	120	.201
	Based on Median	1.272	3	120	.287
	Based on Median and with adjusted df	1.272	3	116.347	.287
	Based on trimmed mean	1.514	3	120	.215

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: ML_score

b. Design: Intercept + Sex + Parent_status + Sex * Parent_status

Appendix J

Tests of Between-Subjects Effects

Dependent Variable: ML_score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1.570[a]	3	.523	10.020	<.001	.200
Intercept	23.434	1	23.434	448.561	<.001	.789
Sex	1.018	1	1.018	19.491	<.001	.140
Parent_status	.117	1	.117	2.236	.137	.018
Sex * Parent_status	.123	1	.123	2.354	.128	.019
Error	6.269	120	.052			
Total	42.491	124				
Corrected Total	7.840	123				

a. R Squared = .200 (Adjusted R Squared = .180)

Appendix K

Estimates

Dependent Variable: ML_score

Sex	Parent_status	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Female	No children	.504[a]	.038	.429	.580
	Parents	.643[a]	.031	.581	.705
Male	No children	.385[a]	.050	.285	.484
	Parents	.398[a]	.055	.289	.508

a. Covariates appearing in the model are evaluated at the following values: LG_Hoursworked = 1.3371.

Appendix L

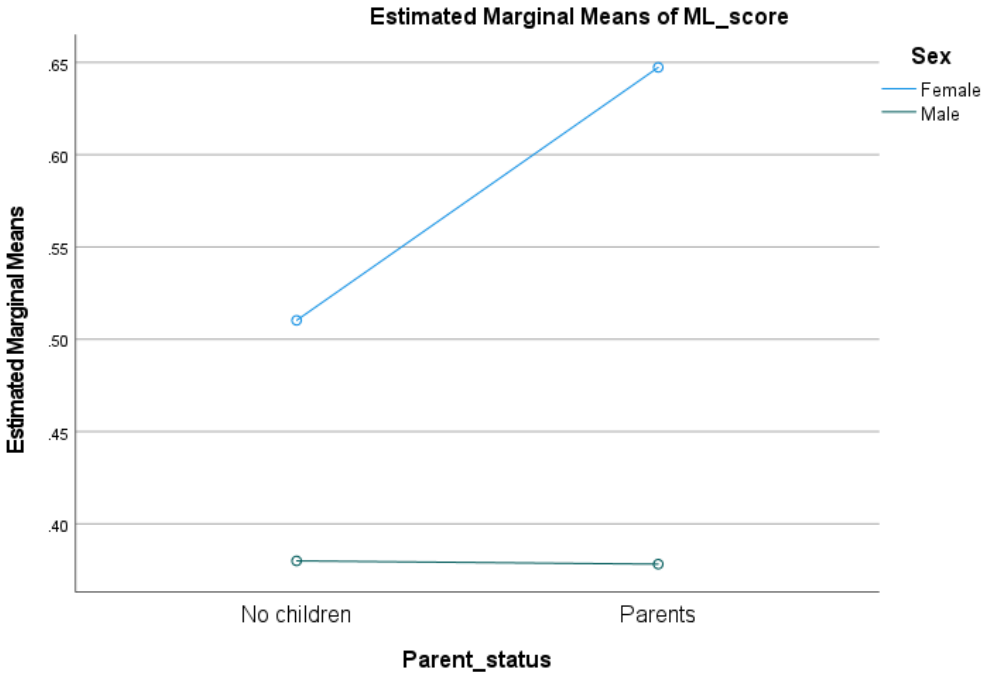
Tests of Between-Subjects Effects

Dependent Variable: ML_score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1.817[a]	4	.454	8.975	<.001	.232
Intercept	.364	1	.364	7.189	.008	.057
LG_Hoursworked	.246	1	.246	4.870	.029	.039
Sex	.820	1	.820	16.194	<.001	.120
Parent_status	.148	1	.148	2.915	.090	.024
Sex * Parent_status	.100	1	.100	1.974	.163	.016
Error	6.023	119	.051			
Total	42.491	124				
Corrected Total	7.840	123				

a. R Squared = .232 (Adjusted R Squared = .206)

Appendix M


Estimated Marginal Means of ML_score
Sex
Female
Male
Estimated Marginal Means
.65
.60
.55
.50
.45
.40
No children
Parents
Parent_status