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**Title:** The impact of gender role attitudes on gender differences in informal care to parents

**Abstract**

Despite shifting attitudes in the last decades that place a greater responsibility on men to be equal partners in the domestic sphere, there remains a persistent gender gap in informal caregiving for older adults. In this study, we investigate how gender role attitudes of women and men influence their provision of care to parents and whether this relationship is moderated by the national institutional context and prevailing gender norms in relation to informal care. To account for the clustered effect of individual values and the overall level of gender equality across different countries we apply multilevel logistic regression to a sample of nine European countries using data from the Gender and Generations survey. We find individual gender egalitarian views to have a significant negative effect on caregiving for women and a positive effect for men. These confirm earlier results on gender egalitarian attitudes contributing to a more equal sharing of domestic labour and men’s increased participation in housework and childcare. Our analysis finds limited support for the moderating effect of location on the relationship between gender egalitarian attitudes and the probability of providing care. While caution should be taken in placing too much hope on changing behaviours through shifts in individual gender role attitudes or public policies alone, gender role attitudes may still contribute to narrowing the gender gap in informal care by influencing policy change through lagged generational change.

**Keywords:** gender, attitudes, informal care, gender equality, norms, gender equal policies, multi-level analysis

**Introduction**

Despite several decades of significant gains in women’s participation in the public sphere and the labour market, family-based care of older people remains highly gendered. Women still perform a disproportionate share of this caregiving. Such gender asymmetry in caring puts women at a greater risk of dropping out of the labour market or reducing their employment to balance their caregiver and paid work commitments, thus, contributing to gender inequality in labour outcomes, including earnings and employment prospects. The persistent gender care gap (i.e. the difference in prevalence of informal caregiving between women and men) is all the more puzzling in light of attitudinal trends from across Europe and North America. These present evidence for gender role attitudes about work and family becoming more egalitarian (Braun and Scott, 2009; Scarborough et al, 2018), and include growing support for men’s involvement in the domestic sphere as more equal partners in parenting, household work and care (Davis and Greenstein, 2009; Sullivan et al, 2018). Extant research on childcare (Bulanda, 2004; McGill, 2014; Evertsson, 2014), housework (Grunow and Bauer, 2014; Kan and Kolpashnikova, 2021) and work-family policies in general (Thébaud and Pedulla, 2016) indicates that men who hold more gender egalitarian views are indeed more likely to engage in housework or childcare. However, there is, thus far, a dearth of evidence on the role of individual preferences or ‘egalitarian gender ideologies’ applied to informal care behaviour. Our study aims to fill this gap in research by exploring the relationship between gender role attitudes and the provision of informal care by women and men. This is a highly relevant and timely discussion as a more egalitarian gender distribution of informal caregiving brought on by more male caregivers would help stave off a possible decline in availability of informal carers as new cohorts of older people have fewer children who will have to shoulder a greater share of care individually (Tolkacheva et al, 2010). A more equal distribution of care could also enable higher employment rates of increasingly educated women among younger cohorts (Rodrigues and Ilinca, 2021). Moreover, greater gender equality in caregiving has an intrinsic value as recognized by the European Care Strategy and the Sustainable Development Goals of the United Nations. The analysis presented below contributes to understanding what factors may contribute to achieving such greater equality.

First, we investigate the extent to which caregiving to parents depends on individual attitudes towards gender roles in the provision of intergenerational informal care. Specifically, we aim to test whether more gender egalitarian attitudes may contribute to a reduction in the gender care gap. Existing data on gender role attitudes consistently show that, in general, women tend to have more egalitarian attitudes than men (Davis and Greenstein, 2009). Moreover, a number of single-country studies find a positive relationship between more egalitarian gender attitudes and men’s care provision to children (Bulanda, 2004; McGill, 2014; Evertsson, 2014). Gender difference in attitudes towards family care provision and support to older adults has been comparatively researched before (Daatland and Herlofson, 2003; Daatland et al, 2011; Mair et al, 2016), but not in relation to attitudes toward gender specialised roles. To our knowledge, ours is the first study to analyse the effect of gender role attitudes on informal caregiving behaviour in a cross-national setting.

Second, accounting for a variety of country-level factors we examine national institutional context and gender norms in relation to how informal care condition affect/influence individuals’ caregiving behaviour. This is important as institutional arrangements and societal-level gender norms shape both individual opportunities and actual behaviour (Pfau-Effinger, 1998). Differences in institutional context, such as care policies and gender norms relating to informal care, are likely to impact gender attitudes and care behaviours of women and men across countries. Several studies that analysed macro-level determinants of informal care (Haberkern et al, 2015; Schmid et al, 2012) have focused on institutionalist explanations, mainly care policies. In our analysis, we extend this by including indicators thatreflect national gender equality at the macro-level. We use multilevel analysis, including specific country-level variables denoting different gender equality policies or dimensions, thus enabling a finer understanding of the interaction between individual and country-level variables one that goes beyond simple comparisons between care regimes. In addition, we use a comparative international dataset (the Gender and Generations Survey) that includes a number of Eastern European countries, thus contributing to wider knowledge on care and gender inequality, which has until now often been limited in scope to Western Europe.

**Gender inequalities in informal caregiving**

Intergenerational informal caregiving by relatives remains the main source of support for most older people in need of care in Europe, particularly those with poor health and living alone (Haberkern and Szydlik, 2010). This support is overwhelmingly carried out by daughters or daughters-in-law, with the gender care gap being particularly large when considering intensive care (Pinquart and Sörensen, 2011; Morgan et al 2016). It is also a picture that has not changed substantially in the past decades, despite numerous societal and demographic transformations (Hirst, 2001).

A number of reasons have been set forward in the literature for the persistence of this gender care gap. One set takes a structuration view (Giddens, 1994) of the gender care gap, seeing it in the broader context of existing gender inequalities in society, namely in political power and access to resources and opportunities such as human capital, employment and income (Haberkern et al 2012). The predominance of women as carers thus reflects fewer opportunities in the labour market, which means that they face lower opportunity costs when engaging in caregiving.

An extensive literature has focused on the multiple ways the welfare state or public policies can shape the gender care gap. For example, care services may partially replace informal care, particularly at the margins, and through this improve gender equality in caregiving (Bonsang, 2007; Verbakel, 2018). There is evidence that gender differences in caregiving are smaller in countries with a strong provision of care services (Haberken et al 2015). Conversely, cash-for-care benefits may reinforce existing gender inequalities, by providing payment for informal care (Saraceno 2010; Ungerson and Yeandle, 2007). Insofar as these cash benefits are closely linked to care, they might be seen as addressing a ‘women’s issue’. It seems nonetheless, that public policies or ‘institutional constraints’ have a greater impact on women than on men (Haberkern et al 2015; Pedulla and Thebáud, 2015). In an example of what Pedulla and Thebáud (2015: 117) called “the disjuncture between contemporary institutional structures and individuals’ ideals”, recent policy developments in Europe seem to have reinforced the reliance on the family as caregivers, despite individual attitudes towards caregiving shifting in the opposite direction (Eurobarometer, 2007).

An additional factor influencing gender inequalities in caregiving are societal level norms regarding ‘who should provide care’, in particular how familialist values intersect with gender norms regarding caregiving within families. Research on care division among siblings and in-laws, indicates that gender norms may play a role as daughters and daughters-in-law are more likely to provide care even in the presence of male siblings (Haberkern et al 2015; Batur et al, 2022). This may arise from strong preferences for same-sex care, particularly personal care, with the gender care gap partially reflecting the longer life-expectancy of women (Haberkern et al 2015; Luppi and Nazio, 2019). Where cross-sex care takes place, this is often deemed more acceptable when provided by women – an argument that seems borne out by the greater share of personal care that female carers deliver (Morgan et al 2016). Not only are daughters more likely than sons to provide care, but they are also more likely to provide care to their mothers than to their fathers (Grigoryeva, 2017). Women also seem to be more impacted by expectations of reciprocity and filial duty in Western European societies and more likely to reduce their labour supply when care needs arise (Morgan et al 2016). In this latter case, this argument is intertwined with women’s relative weaker economic position in society, as mentioned above.

**Gender role attitudes and the division of unpaid work**

A substantive body of research has examined gender role attitudes and their consequences for fertility and family formation (Goldscheider et al, 2013; Lappegard et al 2021), female and maternal labour market outcomes (Schober and Scott, 2012) and the division of domestic labour (Evertsson, 2014; Kan and Kolpashnikova, 2021). Findings from the latter two studies show that women with egalitarian attitudes tend to do less housework and men with more egalitarian views were more likely to increase their share in housework compared to traditional men. Concomitantly, women with egalitarian gender views are more likely than inegalitarian women to perceive inequalities in the division of household labour as unfair (Davis and Greenstein, 2009). Studies that analysed the effect of gender ideologies on the provision of parental care to children report similar results. For instance, the stronger a man’s gender egalitarian ideology, the greater the gender equality in the division of housework and childcare (Evertsson, 2014). These and earlier studies reviewed by Davis and Greenstein (2009) suggest that egalitarian gender role attitudes contribute to a more equitable division of unpaid work such as housework and childcare.

However, equally if not even more relevant than individual beliefs seem to be what others consider to be sanctioned behaviour, particularly for men (Thébaud and Pedulla, 2016). This has been interpreted as a clear indication of ‘doing gender’ (West and Zimmerman, 1987) as a factor explaining the engagement of men with such activities as informal care. For instance, normative approval of men’ unpaid work, especially by men, appears to be a key predictor for their participation in housework (Grünow and Bauer, 2014).

**Research questions and hypotheses**

In this paper, we seek to address the following research questions: (1) to what extent is caregiving to older parents dependent on individual gender role attitudes to care; and (2) to what extent is the association between caregiving behaviour and attitudes affected by national contextual factors and gender norms relating to informal care?

Based on existing empirical evidence and literature related to care and gender role attitudes, we first hypothesise that egalitarian gender role attitudes to care will have opposing effects on women’s and men’s probability to provide care (H1), decreasing the probability of providing care for women and increasing it for men. Our second hypothesis is that this effect will not be uniform among countries (H2): the role of individual gender egalitarian attitudes will be moderated by the degree of gender equality in a given country, with more gender egalitarian policies overall contributing to a greater association between egalitarian gender attitudes and care. Finally, in line with the evidence reviewed above, we hypothesize that the effect of institutional factors will be larger for women (H3).

**Data and method**

We use data from the Gender and Generations Survey (GGS), which offers rich measures on gender roles attitudes, including attitudes toward gender roles in informal caregiving specifically, as well as detailed information on the provision of informal care. Thus, the dataset allows the unique opportunity to investigate how gender differences in these attitudes relate to gender differences in caregiving behaviour. The GGS is a longitudinal survey of thus far 2 waves that captures adults aged 18 to 79 living in the community. It has been carried out across several European and non-European countries with a wide geographical coverage, permitting an analysis focusing on different welfare regimes and public policies. The GSS is particularly recognized for its large coverage of Central and East European countries. Having excluded countries for which no information on informal care or other variables of interest was available, or countries with too few observations, we focus our analysis on 9 European countries: Belgium, France, Germany, Norway, Czech Republic, Bulgaria, Poland, Lithuania and Romania. Given that care for one’s parents is likely to take place during mid-age, we restricted our sample to individuals aged 40 to 64 with at least one living parent. Taking a pooled sample approach with respondents from both wave 1 (2004-2011) and wave 2 (carried out between 2008 and 2015)1, our final sample consists of 26,360 individual observations.

**Variables**

Our dependent variable is a binary variable representing provision of informal care, defined as personal care provided for a parent in the last 12 months. More specifically, the question asks “Over the last 12 months, have you given people regular help with personal care such as eating, getting up, dressing, bathing, or using toilets? Do not include the care you may have given to small children”. A follow-up question discerns the relationship of the cared for person. As information on the health status of the care receiver is only recorded for parents, we focus only on intergenerational care to a living parent (mother and/or father), thus enabling us to control for their health needs.

Our main independent variable of interest, attitudes towards gender roles in informal caregiving, is an ordinal variable of three categories that acts as a proxy for representing how gender egalitarian an individual is in their care views. The statement used is “When parents are in need, daughters should take more caring responsibility than sons”, with possible responses including strongly agree, agree, neither agree nor disagree, disagree and strongly disagree. This variable is operationalized as traditional individuals that (strongly) agreed with this statement (0), the individuals in-between that neither agreed nor disagreed (1), and the egalitarians that (strongly) disagreed (2). We use this question as it not only directly relates to care provided for a parent, but also in comparison to other attitudes question, it directly focuses on gender and measures individuals’ views on the gendered provision of informal care.2

Other independent variables at the individual level based on their influence on caregiving (Broese van Groneau and De Boer, 2016) include sex, self-reported health, education, employment status, partner living in the household, number of children living in the household, age and wave of survey. Further details on the operationalization of these variables can be seen in the appendix (Table A2). Recognizing the potential confounding of views towards family care obligations on gendered views on informal caregiving (as family care is often regarded as ‘female’), we additionally control for this. Family support, proxied by a question on whether the family should be responsible for care when an individual needs it, is operationalized as those that disagree or strongly disagree (0), neither agree nor disagree (1) and agree or strongly agree (2). As the health of the care recipient positively corresponds with a need for (informal) care, we control for health limitations of the parent (i.e. limitations in everyday activities) as a binary variable to represent a need for care.

To account for national institutional context, we use four country-level variables: public expenditure on long-term care as a percentage of GDP (including spending on both in-kind and cash benefits), female labour-force participation (LFP) rate, the percentage of women in national parliament and the percentage of men sharing egalitarian views on care in our sample. Table A3 in the appendix outlines the data sources and years for each indicator. Where data for a given institutional context variable was not available for the year in which the GGS wave was collected, we used data from the next closest available year. We include public expenditure on long-term care as a proxy for the available resources allocated to the long-term care system in the country, indicating alternative options for receiving care (i.e. formally) and therefore a reduced pressure on family (and women) to provide care. The theoretical decision to control for female LFP is twofold: 1) to constitute the extent of gender equality towards women and men’s roles in the labour market and 2) to represent the availability of women to provide care, with the assumption that a lower female LFP rate corresponds to higher availability among women to provide care. The indicator has been used before to study its effect on individual support for egalitarian attitudes (André et al, 2013; Sjöberg, 2004). The percentage of women in national parliament accounts for gender equality in the form of the roles and power women and men place in society. This can be considered an indirect measure for gender equality mainstreaming in policymaking, in that a higher portion of women in influential policymaking roles likely corresponds to more policies aimed to benefit women (OECD, 2014). Finally, the proportion of egalitarian males in our sample follows from research showing that the prevailing opinion of fellow men rather than that of the majority of the population is more likely to drive gender-deviant behaviour of men (Thébaud and Pedulla, 2016).

**Analytical strategy**

Our analytic strategy consists of two components. To answer our first research question, we use bivariate statistical analysis to calculate a number of descriptive statistics to contextualize the care situation and overall gendered views on care by country. Second, we carry out multivariate regression analyses to discern: 1) the relationship between having egalitarian care views and the probability to provide care for both women and men; and 2) the moderating effect that country-variables have on the relationship between egalitarian care views and the probability of providing care by women and men. Given that national institutional contexts are likely to significantly impact the probability of providing informal care, as well as gendered attitudes towards who should be responsible for providing care, we employ a series of mixed multi-level logistic regressions to account for this country-level variation and the likely clustering of variables around countries. All results from the multilevel models are presented as Average Marginal Effects (AMEs) for ease of interpretation of interaction effects (e.g. gender and gender role variables) in the context of non-linear models. We use a stepwise regression approach beginning by carrying out a baseline regression that interacts sex with gendered views on care (Model 1). Model 2 accounts for family support for care, also interacted with sex, and Model 3 incorporates the remaining individual control variables. Taken together, models 1 to 3 test hypothesis H1. To test hypotheses H2 and H3, we add country level variables interacted with individual gender attitudes and sex to each model in Models 4 through 7. As a result of high correlations between country-level variables and to avoid potential collinearity, these interaction terms are added on their own one-by-one in Models 4 through 7. The correlation matrix of these country-level variables can be seen in the appendix (Table A4).

Substantiating our decision to carry out multilevel models, the Interclass correlation coefficients (ICC) for the ‘empty’ model (with no other variables) indicate that country-level clustering explains 27.1% of the variation in prevalence of informal care. This reduces significantly for Models 1 through 4, where the ICC indicate that between 2.2% and 4.1% of the variation in providing informal care can be explained by the hierarchical grouping (i.e. grouping at the country-level) of our model, providing validation to our decision to use multi-level models and indicating the impact that institutional contexts (i.e. countries and their welfare regimes) have on probability of providing informal care.

**Results**

Table 1 displays the descriptive statistics for our sample. Notable distinctions are that carers are more likely to be women, to report poor health, to be slightly older than non-carers, and to have a parent with health limitations. Conversely, carers are less likely to be employed, or to have a partner and children in the household. Carers are less likely to agree or strongly agree that the family should be responsible when care needs arise, and less likely to disagree or strongly disagree that daughters should provide care. Of the countries included in the analysis, Poland contains the largest proportion of carers (7.85%), while the lowest proportion is found in France (3.67%).

[Insert Table 1 here]

Regarding the country-level variables (Table 2) there is an egalitarian attitudes gradient that runs north to south and west to east of Europe. The largest proportion of egalitarians are found in Norway, followed by France, Belgium and Germany, while conversely, the smallest proportion are found in Romania, Lithuania, Czech Republic and Bulgaria. A further breakdown of gender attitudes to care by country and gender can be seen in the Supplementary material, Figure A1.

[Insert Table 2 here]

Figure 1 presents the proportion of women and men providing informal care to parents in the nine countries included in the analysis. Unilaterally across all countries, a larger proportion of women than men provide informal care, with the largest gender gap seen in Poland (7.0 percentage points (pp)) followed by the Czech Republic (5.4 pp). Alternatively, narrowest gender gaps were seen in Germany (1.5 pp), France (2.9 pp) and Bulgaria (2.9 pp). 12.6% and 9.4% of middle-aged women provide informal care to a parent in Poland and Czech Republic respectively. Informal caregiving is reported least frequently by women in Germany (4.9%) and France (5.2%) and by men in France (2.3%), Romania (2.9%) and Belgium (2.8%).

[Insert Figure 2 here]

The probability of providing informal care according to gendered views on care by country and sex is seen in Figure 2. In nearly all countries, women with inegalitarian care views have a higher probability of providing care compared to those with egalitarian views, with the exception of Bulgaria, Germany, and the Czech Republic. The opposite picture is seen for men: in most cases, inegalitarian men are less likely to provide care than are their egalitarian counterparts. Notable country exceptions to this are France, Romania, Poland, and the Czech Republic, where the differences between inegalitarians and egalitarians are either of marginal value or statistically insignificant for men. What seems clearer is that the gender care gap is widest amongst the inegalitarians within each country. Taken together, these results seem to confirm H1.

[Insert Table 3 here]

Substantiating this, the interaction term of gender role attitudes and sex in Model 1 (Table 3) shows opposite effects for men and women. The probability for egalitarian women to provide informal care for a parent is 2.8 percentage points lower than for inegalitarian women. Conversely, egalitarian men are only marginally (0.8 percentage points) more likely to provide informal care to a parent (significant at 10% level). Considering the prevalence of informal care provision among the sample (7.9 % of women and 3.8 % of men provide care to a parent), the magnitude of these AMEs is quite sizeable. These findings hold true, and the results for men become significant at the 5% level, even when views about family being responsible for care are controlled for (Model 2) and the remaining independent variables are included (Model 3).

[Insert Table 4 here]

Building on Model 3 and introducing one country-level variable into each model in Models 4 through 7, the AMEs for the interaction between sex and gender role attitudes remain quite stable, both for women and men, with egalitarian women being less likely to provide care than inegalitarian women by between 1.5 and 2.0 percentage points, and egalitarian men being more likely to do so compared to their traditional counterparts (1.5% to 2%). The ICC values of these models indicate that between 4.9% and 8.0% of variation in the probability to provide care can be explained by country-level variation.

Models 4 to 7 allow us to examine the interaction terms of country-level variables with sex and gender role attitudes as part of H2 and H3, to determine whether more egalitarian country contexts influence the probability of providing care for egalitarian men and women. As seen in Table 4, we find no evidence that gender egalitarian men in gender egalitarian contexts are more likely to be carers than is the case in more traditional contexts. An increase in LTC expenditure at the country-level showed no moderating effect on the association between gender care attitudes for women: a one-unit increase in LTC expenditure was associated with -0.9 percentage points decrease in the probability of providing informal care for women with unegalitarian gender attitudes, with similar and non-significant coefficients for women with in-between (-0.09 pp) and egalitarian (-1.1 pp) gender attitudes. An increase in LTC expenditure (Model 4) and percentage of egalitarian men (Model 7) corresponds with a reduced probability of being a carer for men with undetermined care views, while an increase in women’s labour force participation rate (Model 6) further decreases the probability of caring-giving by traditional men. All these results however are only significant at the 10% level. Therefore, it appears that gender equal public policies proxied in our analysis do not positively influence the uptake of informal care delivery by egalitarian men.

Among women, there is only weak evidence that gender egalitarian contexts are associated with a lower probability of providing care by egalitarian women. Only higher women’s LFP rate translates into a lower probability to provide care among egalitarian women (Model 5). On the contrary, an increase in the percentage of women in national government corresponds to an increase in the likelihood of being a carer for egalitarian women. Furthermore, the AMEs for the interaction effect of country-level variables, sex and gender role attitudes show no differences in the directionality of the impact of these country variables on the probability to provide care within men and women with different gender role attitudes. Simply put, public expenditure on long-term care, women’s LFP rate, proportion of women in national government and share of egalitarian men in a given country all have similar impact on all individuals, regardless of care views or gender. We therefore find limited proof that national contexts, namely public policies and gender norms, have a mediating effect in an individual’s decision to provide informal care and that this effect is higher for women. Results therefore do not support H2 and H3.

**Discussion**

In this paper, we sought to analyse the impact of individual gender role attitudes on women’s and men’ probabilities of providing informal care to older parents, and to assess how national institutional context may mediate this relationship. First, we hypothesised that gender role attitudes have a differential impact on women’s and men’s probability of providing care (H1). We based our hypothesis on previous research that has found men (women) with gender egalitarian beliefs to be more (less) likely to provide care to their children than men (women) with traditional views (Bulanda, 2004; McGill, 2014; Evertsson, 2014). The results support this hypothesis and are consistent with findings from the above cited literature on childcare. We find that women holding egalitarian views are significantly less likely to engage in caregiving to parents than their inegalitarian peers. For men with egalitarian attitudes, the effect works in the opposite direction, that is, men with an egalitarian attitude demonstrate greater involvement in caregiving to parents than traditional men. This equalizing pattern of care-giving among women and men holds when controlling for individual and family characteristics and after adding country-level variables. We have demonstrated that the effect of gender egalitarian attitudes on caregiving is stronger for women than for men, which might be explained by men’s lagged adaptation to the changing position of women in society and home (Sullivan et al, 2018). The stronger effect observed among women may also signify women’s greater interest in supporting gender equality (Bolzendahl and Myers, 2004) as they have more to gain from men’s equal participation in informal caregiving.

We next hypothesized that the effect of gender role attitudes would be moderated by institutional factors at the country level, more specifically, that gender equality policies or outcomes in other social policy areas would enhance the effect of individual gender role attitudes on the behaviour of women and men (H2). We also conjectured that this moderating effect would be greater for women (H3). Neither hypothesis was borne out by the results. More gender equal contexts did not significantly increase the probability for egalitarian men to provide care. For egalitarian women, context also had a statistically insignificant impact. At least one indicator – percentage of women in national government actually produced the opposite effect. Moreover, each of the context variables had the same directionality of impact on the probability to provide care across sex and gender role attitudes. This seeming contradiction of the results of this study with previous literature (Morgan et al 2016, Haberkern et al 2015; Pedulla and Thebáud, 2015) is however, in our opinion not surprising. Other studies showed gender egalitarian contexts to have a greater impact on women by reducing their probability to provide care (cf. Haberkern et al 2015). This is not contradicted by our results, as more gender egalitarian contexts had a negative correlation, albeit mostly not statistically significant, with care provision (with the aforementioned exception of women in national government), regardless of individual gender role attitudes. The lack of a mediating effect for men may be attributed to what Gershuny and colleagues (2005) termed a *lagged adaptation response* of men to the changing behaviour of women and toinstitutional context.

There are a number of limitations to our analyses. First, the survey question in the GGS concerning informal care strictly inquires about providing personal care and does not include other informal care tasks, such as housework or administrative matters. Informal care tasks are highly gendered, with women being more likely to carry out personal care tasks, particularly those of a more intimate nature, while men tend to carry out tasks related to housework and infrequent tasks (Paraponaris et al, 2012). Informal caregiving as captured by our dependent variable may therefore underrepresent the prevalence of care provided by men, although the impact of this on gender differences in gendered attitudes and the probability of providing informal care is unclear. Similarly, we are unable to account for the intensity of informal care, which tends to be higher among women (Ferrant et al, 2014). The correlation of gender role attitudes on the probability to provide care is likely biased downwards, given the restriction of our sample to those aged 40-64. Younger individuals are likely to be the most egalitarian in their gendered views towards care, however given the sample size alongside low prevalence of informal care among individuals under 40 (due to parents not yet having health limitations), we were unable to include this age group. While the importance of accounting for gender attitudes of spouses/partners was noted in the context of housework and childcare (McMunn et al, 2019), this was not possible to assess using the GGS.

These caveats notwithstanding, our findings have a number of policy implications. The gender egalitarian policies proxied by the variables included in this study may still contribute to reducing the gender care gap by meeting women’s stated preferences for greater gender equality and offering them enhanced possibilities to abstain from unpaid care. They have however, a very limited impact on expanding male intergenerational caregiving as they do not directly address men’s right to care (Knijn & Kremer 1997) and may still be seen by men as addressing a ‘women’s issue’. Despite the robust correlation of individual gender role attitudes and caregiving behaviour across sexes, caution is needed before placing too much hope on changing behaviours simply through shifts of individual gender role attitudes. Among our sample of countries, an overwhelming majority of men in Norway, Belgium, France and Germany expressed strong gender egalitarian views. Yet, the gender division of intergenerational caregiving was hardly egalitarian even in those countries. Gender role attitudes may however play another role in narrowing the gender care gap. They may influence policy change through an iterative process - *lagged generational change* - in which evolving individual attitudes and norms put pressure on public policies and hegemonic representations to change accordingly (Sullivan et al 2018). If this is the case, change may come more slowly in Eastern European countries, where egalitarian and inegalitarian gender role attitudes are much more evenly distributed both within women and men.

This study represents a first attempt at extending the literature on individual gender role attitudes and their effect on caregiving behaviour to the realm of intergenerational care for older people, using a comparative dataset that enable study of the wide geographical variation across Europe. While the analysis carried out herealso considered the impact of public policies, further research may seek to better understand which of these policies may shape preferences for a more even distribution of informal caregiving. This might be accomplished using vignettes or quasi-experimental study designs (cf. Bünning and Hipp 2021, for childcare). We used individual level data but further surveys using households as the sampling unit may be able to analyse how shared or dissonant gender role attitudes within couples affect the division of intergenerational informal caregiving between spouses. This subject is all the more relevant since demographic ageing will likely pressure the current gendered distribution of intergenerational care as more recent generations of older people with fewer children become frail.

**Notes**

1 See Appendix Table A1 for more details.

2 Other items focusing on gender role attitudes in the GSS capture gender ideology in a broader sense, rather than in the scope of care.

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Table 1: Descriptive statistics for the regression sample

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Total sample | | Carers | | Non-carers | |
|  | N= 26,360 | | N= 24,847 | | N= 1,513 | |
|  | % (mean) | s.d. | % (mean) | s.d. | % (mean) | s.d. |
| Providing informal care | 6.0 |  | - | - | - | - |
| Male | 49.3 |  | 31.9 |  | 50.3 |  |
| Gender attitudes to care  (ref=daughters should provide care) | | |  |  |  |  |
| Neither agree nor disagree | 22.0 |  | 22.8 |  | 22.0 |  |
| Strongly disagree | 63.5 |  | 60.3 |  | 63.7 |  |
| Family support for informal care (ref = disagree that family should provide care) | | |  |  |  |  |
| Neither agree nor disagree | 18.1 |  | 16.0 |  | 18.2 |  |
| Strongly agree | 71.1 |  | 70.9 |  | 75.5 |  |
| Poor Self-Reported health | 8.4 |  | 11.5 |  | 8.2 |  |
| Education |  |  |  |  |  |  |
| Secondary | 62.1 |  | 64.6 |  | 61.9 |  |
| Tertiary | 29.6 |  | 28.3 |  | 29.6 |  |
| Employed | 72.1 |  | 60.3 |  | 72.8 |  |
| Parent with activity limitation/disability | 31.7 |  | 71.4 |  | 29.3 |  |
| Living with partner/spouse | 79.0 |  | 70.8 |  | 79.5 |  |
| N. of children in household | (1.1) | 0.01 | (0.79) | 0.03 | (1.2) | 0.01 |
| Age | (48.8) | 0.04 | (52.1) | 0.16 | (48.6) | 0.04 |
| Countries | N |  | Carers (%) |  |  |  |
| Bulgaria | 2939 |  | 6.67 |  |  |  |
| Germany | 2378 |  | 4.46 |  |  |  |
| France | 4684 |  | 3.67 |  |  |  |
| Romania | 2428 |  | 4.22 |  |  |  |
| Norway | 3873 |  | 5.76 |  |  |  |
| Belgium | 1873 |  | 5.61 |  |  |  |
| Lithuania | 2053 |  | 6.35 |  |  |  |
| Poland | 4712 |  | 7.85 |  |  |  |
| Czech Republic | 1420 |  | 7.59 |  |  |  |

Source: Generations and Gender Survey Wave 1 and 2. Total sample refers to all individuals aged 40-64 with at least 1 living parent. Informal carers are defined as those providing personal care to a parent.

Table 2: Descriptives of country-level variables

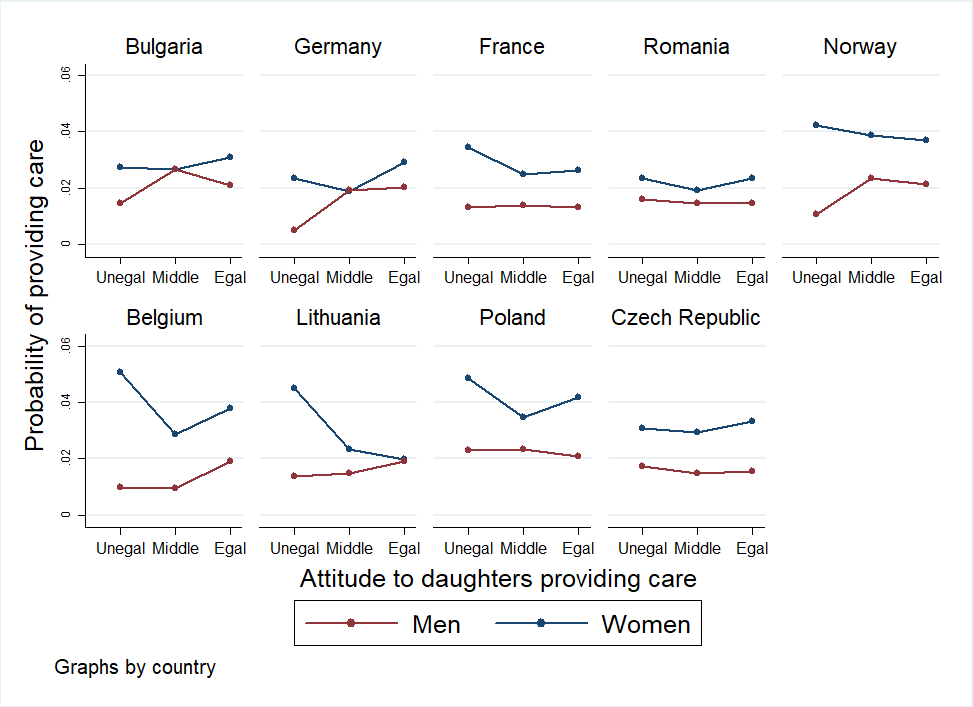
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | LTC expenditurea (% of GDP) | LFP rate of womenb (%) | Women in national parliamentc (%) | Egalitariansd (%) |
| Bulgaria | 0.19 | 57.2 | 27.6 | 47.6 |
| Germany | 1.54 | 66.9 | 32.8 | 71.4 |
| France | 1.08 | 64.4 | 15.1 | 84.3 |
| Romania | 0.02 | 56.2 | 11.2 | 37.3 |
| Norway | 2.10 | 76.0 | 36.0 | 91.7 |
| Belgium | 2.08 | 61.2 | 38.0 | 81.2 |
| Lithuania | 0.29 | 64.6 | 22.1 | 41.7 |
| Poland | 0.40 | 58.8 | 19.9 | 53.7 |
| Czech Republic | 0.20 | 61.7 | 15.3 | 43.7 |

Note: all figures refer to the averages for each country across the 2 waves.  a Source: Eurostat, ECFIN Ageing Report (2012), Popa, D. (2011).  
b Source: Eurostat LFS.   
­c Source: European Institute for Gender Equality (EIGE).  
d Source: Generations and Gender Survey Wave 1 and 2. Note: This variable is an endogenously created variable, crafted using men in the sample, aged 40-64. The proportion of egalitarians refers to the proportion of men in the sample that agree or strongly agree with the statement “When parents are in need, daughters should take more caring responsibility than sons”.

Figure 1: Proportion of women and men providing informal care to parents by country****

Source: Generations and Gender Survey, wave 1 and 2. Weighted results.

Figure 2: Probability of providing informal care for parents by gender, country and category of attitudes towards daughters taking responsibility for care

****

Source: GGS Wave 1 and Wave 2. All individuals aged 40-64. “Unegal” category represents those that (strongly) agree with the statement that “When parents are in need, daughters should take more caring responsibility than sons”. Those in the middle category neither agree nor disagree with this statement, and those in the “Egalitarian” category (strongly) disagree with the statement.

Table 3: Multilevel logit model of impact of gender attitudes to care on provision of informal care for

parents (AMEs)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 0 | | Model 1 | | Model 1 | | Model 2 | | Model 3 | |
| AMEs |  |  |  |  |  |  |  |  |  |  |
| Gender attitude to care (Ref=“unegal”) | All | | All | | Women | Men | Women | Men | Women | Men |
| In-between |  |  | -0.013\*\* | | -0.029\*\*\* | 0.013\* | -0.027\*\*\* | 0.005\*\* | -0.022\*\* | 0.014\*\* |
| Egalitarian |  |  | -0.012\*\* | | -0.028\*\*\* | 0.008† | -0.026\*\*\* | 0.004\* | -0.019\*\* | 0.011\* |
|  | b | SE | b | SE | b | SE | B | SE | b | SE |
| Country level variance | 0.797 | 0.0399 | 0.077 | 0.039 | 0.071 | 0.036 | 0.069 | 0.035 | 0.144 | 0.071 |
| ICC | 0.271 |  | 0.022 | | 0.021 | | 0.020 | | 0.041 | |

Notes: †p < 0.10; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001. Weighted results. Level 2 of model are countries. See supplementary Table A2 for model details. Model 1: accounts for gender attitudes to care. Model 2: accounts for gender attitudes to care, gender, and an interaction of the two variables. Model 3: same as model 2 but additionally accounting for the family support variable and interaction of it with gender. Model 4: same as model 3 but additionally controlling for poor self-reported health, education, employment, parent’s health limitations, partner in the household and number of children in the household.

Table 4: Multilevel logit model of impact of gender attitudes to care and country-level variables on provision of informal care (AMEs)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 4 | | Model 5 | | Model 6 | | Model 7 | |
| AMEs |  |  |  |  |  |  |  |  |
| Gender attitude to care (Ref=“unegal”) | Women | Men | Women | Men | Women | Men | Women | Men |
| Middle | -0.023\* | 0.013\* | -0.023\*\* | .015\*\* | -0.019\* | 0.014\*\* | -0.021\* | 0.013\* |
| Egalitarian | -0.020\*\* | 0.013\*\* | -0.019\*\* | 0.012\*\* | -0.015\* | 0.015\*\* | -0.020\*\* | 0.013\* |
|  |  |  |  |  |  |  |  |  |
| Country-level variables |  |  |  |  |  |  |  |  |
|  | LTC Expenditure | | Women’s LFP rate | | % of women in parliament | | % of male egalitarians | |
|  | Women | Men | Women | Men | Women | Men | Women | Men |
| Unegalitarian | -0.009 | -0.011 | -0.002 | **-0.002†** | 0.001 | >-0.001 | -0.046 | -0.037 |
| Middle | -0.009 | **-0.016†** | -0.002 | -0.001 | 0.001 | >0.001 | -0.026 | **-0.056†** |
| Egalitarian | -0.011 | -0.004 | **-0.002†** | -0.001 | **0.002†** | 0.001 | -0.056 | -0.030 |
|  | b | SE | b | SE | b | SE | b | SE |
| Country level variance | 0.122 | 0.061 | 0.121 | 0.060 | 0.189 | 0.108 | 0.112 | 0.056 |
| ICC | 0.053 |  | 0.053 |  | 0.080 |  | 0.049 |  |
| N respondents | 27,889 | | 27,889 | | 27,889 | | 27,889 | |
| N countries | 9 | | 9 | | 9 | | 9 | |

Note: †p < 0.10; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001. Weighted results. Average Marginal Effects. Level 2 of model are countries. See supplementary Table A3 for model details. Model 1 through 5 consist of all control variables in model 4. The models additionally control for the following additional country-level variables: Model 1: LTC expenditure (% of GDP); Model 2: women’s labour force participation rate; Model 3: % of women in national parliament; Model 4: % of egalitarian men in the sample.

**Supplemental material**

Table A1: GSS fieldwork characteristics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Country | Wave 1 | | Wave 2 | |
|  | Data collection year | Sample size | Data collection year | Sample size |
| Belgium | 2008/2010 | 7163 | - | - |
| France | 2005 | 10079 | 2008 | 6533 |
| Germany | 2005 | 10017 | 2008/2009 | 3226 |
| Norway | 2007/2008 | 14880 | - | - |
| Czech Republic | 2005 | 10006 | 2008 | 3149 |
| Bulgaria | 2004/2005 | 12853 | 2007 | 9344 |
| Poland | 2010/2011 | 19987 | 2014/2015 | 12294 |
| Lithuania | 2006 | 10036 | 2009 | 2292 |
| Romania | 2005 | 11986 | - | - |

Source: Fokkema et al. (2016) for Wave 1

Table A2: Formulation and operationalization of variables used in analysis

|  |  |  |
| --- | --- | --- |
| Variable | Question(s) | Operationalization |
| Dependent variables | | |
| Informal care for a parent | Over the last 12 months, have you given people regular help with personal care such as eating, getting up, dressing, bathing, or using toilets? Do not include the care you may have given to small children  > Whom have you helped? | 1: Provided care to a parent  0: Didn’t provide care to a parent |
| Independent variable | | |
| Gendered view on informal caregiving | When parents are in need, daughters should take more caring responsibility than sons  > Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree | Egalitarians (2): strongly agree, agree  In-between (1): neither agree no disagree  Inegalitarians (0): strongly disagree, disagree |
| Control variables | | |
| Family support | Children should take responsibility for caring for their parents when parents are in need  > Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree | 2: strongly agree, agree  1: neither agree no disagree  Inegalitarians  0: strongly disagree, disagree |
| Sex |  | 1: Women  0: Men |
| Self-reported health | How is your health in general?  > Very good, good, fair, bad, very bad | 1: very good, good, fair 0: bad, very bad |
| Education | What is the highest level of education you have successfully completed? | 1: Primary  2: Secondary  3: Tertiary |
| Employment status | Which of the items on the card best describes what you are mainly doing at present?  1 – employed or self-employed  2 – helping family member in a family business or a farm  3 – unemployed  4 – student, in school, in vocational training  5 – retired  6 – on maternity leave, parental leave or childcare  leave  7 – ill or disabled for a long time or permanently  8 – looking after the home or family  9 – military service or social service  10 – other | 1: Employed or self-employed, helping family member in a family business or a farm  0: unemployed, student, retired, maternity/parental/childcare leave, disability, looking after the home, military services, other |
| Health limitations of parents | Is your (mother/father) limited in (her/his) ability to carry out normal everyday activities because of a physical or mental health problem or a disability?  > yes, no | 1: yes for at least one parent 0: no |
| Partner living in household |  | 1: partner living in household  0: no partner/partner not living in household |
| Number of children living in household |  | Continuous |
| Age |  | Continuous |

Table A3: Data sources and year(s) of data collected used to compile country-level variables

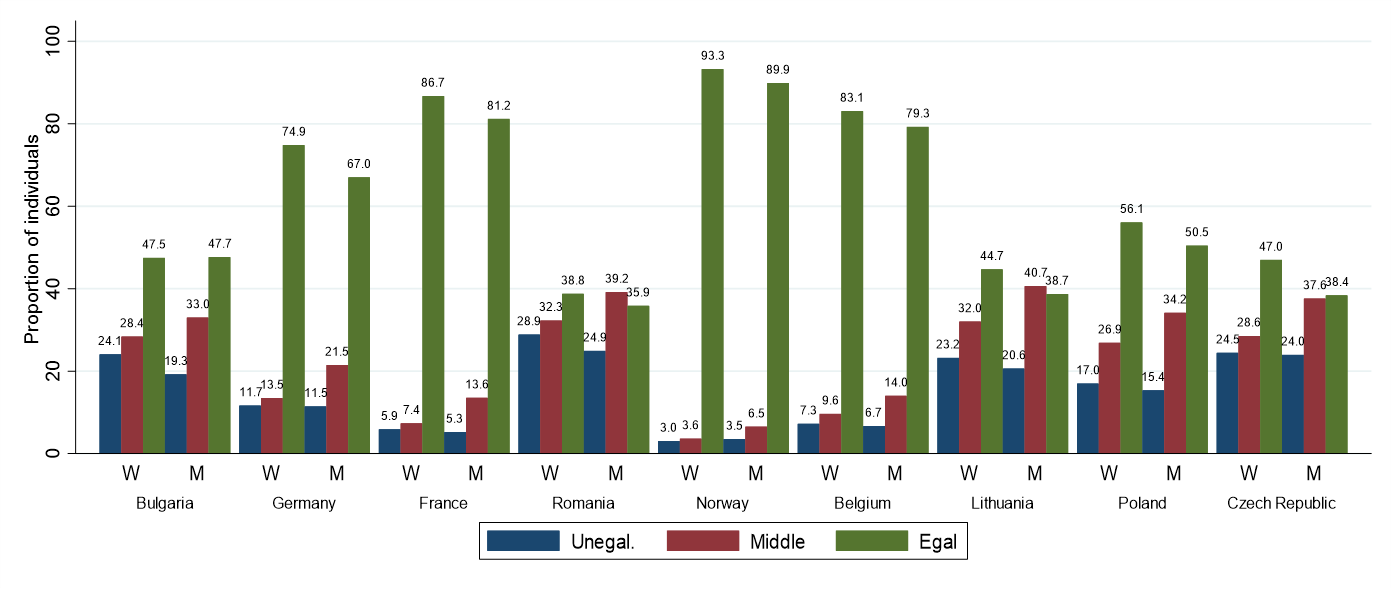
|  |  |  |  |
| --- | --- | --- | --- |
|  | LTC expenditure (% of GDP) | LFP rate of women (%) | Women in national parliament(%) |
| Bulgaria | ECFIN Ageing Report (2007) | Eurostat LFS (2008, 2009) | EIGE (2004, 2005, 2007) |
| Germany | Eurostat (2005, 2008) | Eurostat LFS (2005, 2008, 2009) | EIGE (2005, 2008, 2009) |
| France | Eurostat (2005) | Eurostat LFS (2005, 2008) | EIGE (2005, 2008) |
| Romania | Popa, D .(2011) (2008) | Eurostat LFS (2005) | EIGE (2005) |
| Norway | Eurostat (2007) | Eurostat LFS (2007, 2008) | EIGE (2007, 2008) |
| Belgium | Eurostat (2008) | Eurostat LFS (2008, 2009) | EIGE (2008, 2010) |
| Lithuania | Eurostat (2006, 2009) | Eurostat LFS (2006, 2009) | EIGE (2006, 2009) |
| Poland | Eurostat (2010, 2014) | Eurostat LFS (2010, 2011) | EIGE (2010, 2011, 2014, 2014) |
| Czech Republic | Eurostat (2005, 2008) | Eurostat LFS (2005, 2008) | EIGE (2005, 2008) |

Note: The 4th country-level variable, proportion of egalitarian men in the sample, is not shown as this variable is crafted endogenously.

Table A4: Correlations between country-level variables

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| LTC Expenditure | 1 |  |  |  |
| LFP rate of women | 0.793 | 1 |  |  |
| Women in national parliament (%) | 0.735 | 0.562 | 1 |  |
| Egalitarians (%) | 0.897 | 0.731 |  | 1 |

Figure A1: % of individuals with inegalitarian, egalitarian and in between gendered care views by gender and country



Source: GGS Wave 1 and Wave 2. All individuals aged 40-64. Inegalitarian represents those that (strongly) agree with the statement that “When parents are in need, daughters should take more caring responsibility than sons”. Those in the middle category neither agree nor disagree with this statement, and those in the “Egalitarian” category (strongly) disagree with the statement.

Table A5: Multilevel logit model of impact of gender attitudes to care on provision of informal care for parents (unadjusted coefficients)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
|  | b | SE | b | SE | b | SE | b | SE |
| Gender attitude to care (Ref= Unegalitarians) |  |  |  |  |  |  |  |  |
| Middle | -0.236\*\* | 0.081 | -0.387\*\*\* | 0.097 | -0.366\*\*\* | 0.098 | -0.331\*\* | 0.104 |
| Egalitarian | -0.210\*\* | 0.072 | -0.366\*\*\* | 0.081 | -0.347\*\*\* | 0.082 | -0.276\*\* | 0.089 |
| Gender (Ref= women) |  |  | -1.322\*\*\* | 0.155 | -1.592\*\*\* | 0.269 | -1.624\*\*\* | 0.275 |
| Gender x Gender attitude to care |  |  |  |  |  |  |  |  |
| Male x Middle |  |  | 0.777\*\*\* | 0.189 | 0.796\*\*\* | 0.190 | 0.770\*\*\* | 0.198 |
| Male x Egalitarian |  |  | 0.633\*\*\* | 0.171 | 0.666\*\*\* | 0.173 | 0.646\*\*\* | 0.179 |
| Family support (Ref=(Strongly)Disagree) |  |  |  |  |  |  |  |  |
| Middle |  |  |  |  | 0.031 | 0.129 | 0.086 | 0.134 |
| (Strongly) agree |  |  |  |  | 0.196† | 0.114 | 0.271\* | 0.120 |
| Gender x Family support |  |  |  |  |  |  |  |  |
| Male x Middle |  |  |  |  | 0.131 | 0.256 | 0.173 | 0.261 |
| Male x (Strongly) agree |  |  |  |  | 0.283 | 0.223 | 0.324 | 0.228 |
| Bad Self-Reported Health |  |  |  |  |  |  | -0.121 | 0.090 |
| Education (Ref=Primary) |  |  |  |  |  |  |  |  |
| Secondary |  |  |  |  |  |  | 0.325\*\* | 0.108 |
| Tertiary |  |  |  |  |  |  | 0.313\*\* | 0.116 |
| Employed |  |  |  |  |  |  | -0.058 | 0.063 |
| Parent limitations |  |  |  |  |  |  | 1.952\*\*\* | 0.060 |
| Partner in household |  |  |  |  |  |  | -0.246\*\*\* | 0.060 |
| N. of kids in household |  |  |  |  |  |  | -0.128\*\*\* | 0.031 |
| Age |  |  |  |  |  |  | 0.052\*\*\* | 0.004 |
| Wave |  |  |  |  |  |  | -0.182\* | 0.083 |
| Intercept | -2.64\*\*\* | 0.112 | -2.229\*\*\* | 0.113 | -2.392\*\*\* | 0.156 | -5.87\*\*\* | 0.359 |
| N respondents | 27,889 | | 27,889 | | 27,889 | | 27,889 | |
| N countries | 9 | | 9 | | 9 | | 9 | |

Table A6: Multilevel logit model of impact of gender attitudes to care on provision of informal care with country-level variables (unadjusted coefficients)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 5 | | Model 6 | | Model 7 | | Model 8 | |
|  | B | se | B | se | B | se | B | se |
| Individual Variables |  |  |  |  |  |  |  |  |
| Gender attitude to care (Ref= Unegalitarians) |  |  |  |  |  |  |  |  |
| Middle | -0.314\* | 0.143 | .210 | 1.524 | -0.528 | 0.350 | -0.424 | 0.390 |
| Egalitarian | -0.244\* | 0.124 | .382 | 1.173 | -0.594\* | 0.283 | -0.114 | 0.313 |
| Gender (Ref= women) | -1.478\*\*\* | 0.319 | .9493 | 2.465 | -1.209\* | .561 | -1.197† | 0.649 |
| Gender x Gender attitude to care |  |  |  |  |  |  |  |  |
| Male x Middle | 0.762\*\* | 0.266 | -1.626 | 2.9447 | 0.713 | 0.638 | 0.915 | 0.737 |
| Male x Egalitarian | 0.430† | 0.248 | -2.963 | 2.555 | -0.017 | 0.561 | 0.160 | 0.654 |
| Family support (Ref=Disagree) |  |  |  |  |  |  |  |  |
| Middle | 0.084 | 0.135 | 0.082 | 0.135 | 0.092 | 0.135 | 0.081 | 0.135 |
| (Strongly) agree | 0.266\* | 0.123 | 0.247\* | 0.122 | 0.277\* | 0.122 | 0.263\* | 0.123 |
| Gender x Family support |  |  |  |  |  |  |  |  |
| Male x Middle | 0.190 | 0.263 | 0.194 | 0.262 | 0.191 | 0.262 | 0.177 | 0.264 |
| Male x (Strongly) agree | 0.340 | 0.238 | 0.387† | 0.234 | 0.356 | 0.233 | 0.322 | 0.238 |
| Bad Self-Reported Health | -0.118 | 0.090 | -0.115 | 0.090 | -0.123 | 0.090 | -0.119 | 0.090 |
| Education (Ref=Primary) |  |  |  |  |  |  |  |  |
| Secondary | 0.325\*\* | 0.108 | 0.328\*\* | 0.108 | 0.326\*\* | 0.108 | 0.321\*\* | 0.108 |
| Tertiary | 0.311\*\* | 0.116 | 0.315\*\* | 0.116 | 0.308\*\* | 0.117 | 0.311\*\* | 0.116 |
| Employed | -0.061 | 0.063 | -0.059 | 0.063 | -0.066\*\*\* | 0.064 | -0.056 | 0.063 |
| Parent limitations | 1.951\*\*\* | 0.061 | 1.954\*\*\* | 0.061 | 1.951\*\*\* | 0.061 | 1.953\*\*\* | 0.061 |
| Partner in household | -0.243\*\*\* | 0.060 | -0.242\*\*\* | 0.060 | -0.245\*\*\* | 0.060 | -0.248\*\*\* | 0.060 |
| N. of kids in household | -0.128\*\*\* | 0.031 | -0.129\*\*\* | 0.031 | -0.131\*\*\* | 0.031 | -0.128\*\*\* | 0.031 |
| Age | 0.052\*\*\* | 0.005 | 0.052\*\*\* | 0.005 | 0.052\*\* | 0.005 | 0.052\*\*\* | 0.005 |
| Wave | -0.164 | 0.085 | -0.141 | 0.087 | -0.265 | 0.097 | -0.186\* | 0.083 |
| Country variables | LTC expenditure (% of GDP) | | LFP rate women (%) | | Women in national parliament (%) | | Egalitarians (%) | |
| Country variable | -0.122 | 0.193 | -0.026 | 0.026 | 0.014 | 0.018 | -0.620 | 0.776 |
| Country variable x gender (male) | -0.340 | 0.331 | -0.043 | 0.041 | -0.021 | 0.024 | -0.860 | 1.181 |
| Country variable x care attitude |  |  |  |  |  |  |  |  |
| Middle | -0.031 | 0.197 | -0.009 | 0.025 | 0.009 | 0.016 | 0.185 | 0.742 |
| Egalitarian | -0.053 | 0.149 | -0.011 | 0.019 | 0.015 | 0.012 | -0.300 | 0.572 |
| Country variable x gender x care attitude |  |  |  |  |  |  |  |  |
| Male x Middle | 0.034 | 0.401 | 0.040 | 0.049 | 0.003 | 0.030 | -0.271 | 1.439 |
| Male x Egalitarian | 0.396 | 0.344 | 0.059 | 0.042 | 0.030 | 0.026 | 0.956 | 1.243 |
|  |  |  |  |  |  |  |  |  |
| Intercept | -5.758\*\*\* | 0.377 | -4.221 | 1.629 |  |  | -5.478 | 0.561 |
| N respondents | 27,889 |  |  |  |  |  |  |  |
| N countries | 9 |  |  |  |  |  |  |  |

Note: †p < 0.10; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001. Weighted results. Unadjusted coefficients. Level 2 of model are countries.