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## ORIGINAL ARTICLE

# Poor labour market prospects due to intensive caregiving? Childcare and eldercare among welfare recipients in Germany

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**Abstract**

Despite the favourable economic situation in Germany over the last decade, the number of welfare recipients (~5 million) remained at a persistently high level. One factor limiting individuals' abilities to exit welfare dependency into employment is informal care. This article analyses two aspects of informal care: childcare, considering the number of caregivers in a given family constellation, and the amount of time spent on eldercare. A panel of survey data with comprehensive information on welfare recipients is used. The waves from 2006 to 2017 are included. The results suggest that the chances of exiting welfare dependency for those in jobs covering needs are strongly impacted by the intensity of caregiving. Single parents, as well as welfare recipients who spend >10 h/wk on eldercare, especially persons providing both of these types of caregiving, have the lowest probabilities of leaving welfare dependency among all recipient groups.

**KEYWORDS**

childcare, eldercare, employment, family structure, gender, welfare

**INTRODUCTION**

After the crisis of 2008–2009, Germany experienced a remarkable economic recovery. However, long-term unemployment, in general, has proven to be pervasive. In Germany, long-term unemployed persons capable of working can receive means-tested welfare benefits (Social Code Book II or SGB-II benefits). Eligibility is conditional on the economic need of the household and on at least one household member of working age (15–65 years) being able to work for a minimum of 3 h/day. For the long-term unemployed living in a one-person household, the level of benefits according to SGB-II is on average significantly lower than the level of (short-term) income-

related SGB-III benefits unemployed persons receive in the first year of unemployment. However, means-tested benefit aims to secure a minimum standard of living. Moreover, SGB-II benefits are differentiated by the number of persons in the household in need.

Apart from long-term unemployed persons, for example, low-paid and/or part-time workers or persons in education are covered by SGB-II if their wages are below the level of SGB-II benefits (Bruckmeier et al., 2010). The benefit recipients have access to measures of support and are required to reduce or end the receipt of benefits through employment. Welfare recipients caring for children younger than 3 years of age are exempt from this obligation. In sum, however, according to official statistics, only ~3% of

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the SGB II unemployed took up employment to cover their needs in 2019. Among the short-term unemployed in SGB III, the rate was five times higher.

Findings about factors explaining the low transition rates into employment among the long-term unemployed and, hence, explanations for the persistence of this kind of welfare dependency are of enormous interest, as long-term unemployment and benefit receipt have a broad scope of microeconomic consequences and social implications (Bruckmeier et al., 2020). Long-term welfare dependency often affects both the health status of individuals and the social health system. Poorer educational and employment opportunities for children from recipient families also have not only individual but also social consequences. Negative macroeconomic effects on the functioning of the national labour market (Cahuc et al., 2014) can also be assumed because with the declining employability of the long-term unemployed, substantial parts of the labour force potential remain unused but are urgently needed in tight labour markets.

Studies that sought to explain long-term unemployment typically referred to macroeconomic conditions, for example, structural conditions (Bäckman & Bergmark, 2011; Nickell & Layard, 1999) and/or microeconomic factors, such as individual characteristics or attitudes (Schels, 2011). Most of these studies, however, did not take into account informal care (very similar to Hohmeyer & Lietzmann, 2020). However, caregiving is another crucial factor that also impacts the chances of labour market participation for unemployed individuals (for an overview, see Bauer & De Sousa-Poza, 2015) because the provision of care is a time-consuming activity that competes with the incentives to undertake employment. Welfare recipients might be hindered from integrating into the labour market when they need to spend time providing care. However, the body of literature dealing with child or eldercare focused on the relation between caregiving and (changes in) working hours of employed persons (e.g., Keck & Saraceno, 2010; Leigh, 2010; Lilly et al., 2007 for an overview; Meng, 2013) and ignored welfare recipients.

So far, only Hohmeyer and Kopf (2020) as very rare exceptions, have investigated the unemployed welfare recipient-care relationship. Our study aims to fill this gap. Reintegration in this context signifies that working enables recipients to leave welfare dependency irrespective of whether the job is a part-time or a full-time job. Second, given that a considerable percentage of welfare recipients are caregivers (~40%; many of them are single parents), we focused on the impact of childcare on the employment prospects of welfare recipients. Third, we provided new empirical insights about caregiving, as we controlled for the intensity of childcare provision by

considering five different caregiver categories. Fourth, we took into account eldercare and differences in the level of intensity of caregiving. There is an inverse relationship between the intensity of caregiving and labour market work. Intensity can be measured, for example, by weekly hours of caregiving, primary caregiver status, lack of caregiver substitutes, care recipients' increasing need and the number of care recipients (see Lilly et al., 2007). Fifth, the analysis investigated both kinds of informal care simultaneously, which has rarely been done previously. This is a completely new but important aspect of empirical research. This double burden of care given applies in particular to the so-called sandwich generation. This group is of increasing interest, as the age of women at the birth of their first child has increased in recent years and life expectancy is rising.

As we have information about individual (and not only household-related) caring responsibilities, we also go beyond analysing the gendered division of household labour, measured in many studies with a focus on caring. Therefore, the aim of our study is twofold: (1) we answer the question of whether caregiving activities prevent exit from welfare assistance and reintegration into the labour market, and in this context, (2) we want to understand the importance of the intensity of caregiving. We therefore measured this intensity in four dimensions: (a) the (im-)possibility of sharing childcare with a partner, (b) the age of the child to care for, (c) the time that must be spent on eldercare, and (d) the double burden of care given to children and elderly individuals. For this purpose, we used rich survey data, which is conducted yearly. These panel data provide comprehensive information on individual characteristics and family and household contexts.

## LITERATURE REVIEW

The results of studies examining the number of hours a person works and informal caregiving activities were ambiguous. Many analyses found evidence of only small effects (Heitmüller, 2007, for Great Britain and van Houtven et al., 2013, for the United States). According to Bauer and De Sousa-Poza (2015), several studies even failed to identify a link between caregiving and work. They referred to a review by Lilly et al. (2007) of 34 articles for different countries on the effects of caregiving on labour force participation published between 1986 and 2006.

More recent studies, however, showed some effects of caregiving controlling for gender. For Great Britain, Hoherz and Bryan (2020) concluded that fatherhood does have a small effect on men's working hours, and Boye (2019) found for Sweden that child-related absences from

work were associated with lower wages, particularly among men. In contrast, Evertsson (2016) stated that there is no significant relationship between family leave and the occupational mobility of young women in Sweden.

The work of Grönlund and Öun (2020) is, as far as we know, a rare exception investigating the share of caregiving work among parents. However, they focused on parents' deliberations on children's daycare hours related to two full-time careers and parental stress.

The fact that these studies tended to focus on the extent to which care influences the labour supply (and not participation in general) might partly be because, in countries such as the United Kingdom or Sweden, the social security system supports or necessitates labour force participation to a greater extent than the continental welfare state regime (see Esping-Andersen, 1990 for a classification) to which Germany belongs.

The continental welfare regime in Germany is characterised by a high degree of regulation of the social security system. The welfare assistance for different unemployed personal groups aims at remaining and/or reintegrating into "normal work biography" (Möhring, 2016). This also leads to the provision of childcare facilities or institutions that support or take over eldercare. However, in contrast to Sweden, the provision of childcare places is not comprehensive. This is especially true for younger children, and only 35% of children younger than 3 years are cared for outside the family (Destatis, 2021). Consequently, the activation principle is reduced for welfare recipients who care for younger children. These recipients do not have to be available to the labour market when childcare cannot be organised. The results of Achatz and Trappmann (2011) confirmed that among welfare recipients in Germany, women with children have the highest risk of remaining dependent on welfare benefits, whereas for men living with children in the household, the chances of transition to employment increase.

Referring to eldercare, there was some evidence that caregivers are less likely to have a paid job (Berecki-Gisolf et al., 2008; Nguyen & Connolly, 2014). As was shown by Lilly et al. (2007) and Naldini (2016), in the case of eldercare, labour market participation also depends on the intensity of caregiving in several countries. This means that only caregivers who are heavily involved in caring have a smaller chance of participating in paid work at all.

Kraus and Riedel (2022) expanded the European perspective of Esping-Andersen's typology to include a consideration of welfare state regimes in Latin American countries, among others. According to the authors, in the countries of the South, where institutional protection is still much weaker, the family takes responsibility for the care of the elderly. This approach can prove detrimental for the labour market outcomes of informal carers, who

in fact, are often women. We find this constellation even in high-wage countries such as Germany, albeit to a lesser extent than in the South.

In the case of Chile, a country with the southern type of welfare state regime with a weak social protection system, Villalobos Dintrans (2019) also showed that persons who provided informal care earned less. Due to their caring situation, they had fewer opportunities to participate in the labour market and fewer options from which to choose.

## THEORETICAL BACKGROUND

Caregiving is a crucial factor that hinders welfare recipients from entering employment (Achatz & Trappmann, 2011; Hohmeyer & Kopf, 2020). From a theoretical perspective, it is useful to refer to the theory of the allocation of time by Becker (1965, 1985) to explain the persistence of welfare dependency among caregiving individuals. According to this viewpoint, it is assumed that labour market work and unpaid caregiving compete for an individual's scarce time. The choice of allocating time between different activities by maximising utility covers the decision regarding splitting time between supplying labour and providing informal care (Stanfors et al., 2019).

Becker (1985) suggested that individuals with numerous caregiving responsibilities have fewer resources for paid work because of the resources spent at home (see also Carling et al., 1996; Malke Moussa, 2019). Therefore, one of the mechanisms explaining the low level of transitions to employment may be decreased work capacity (Boye, 2019).

Hence, it was assumed that:

**Hypothesis 1.** Informal child and eldercare reduce the likelihood of leaving welfare status for a job that covers needs.

Of course, time constraints due to childcare responsibilities differ depending on the possibility of sharing caring duties. Sharing the job of caring can increase one's time capacity to work. Hence, the family context, which also includes the number of potential earners and negotiated care decisions provide important information for analysing the labour market chances of the unemployed (see Michaud et al., 2010).

The results of the studies introduced in the previous chapter also suggested the necessity to distinguish between men and women, as caregiving impacts work differently depending on gender. Becker's time allocation theory (Becker, 1965), however, stated that whichever partner is less efficient at market work (in the past, predominantly

women) will spend more time on domestic activities. As changing family constellations (e.g., marriage, cohabitation, separation, same-sex partnership) replace the traditional family in which women in particular undertake caring tasks, an adaptation of how to investigate the relation between caregiving and labour participation is necessary. In addition, we would agree with the argument of van der Lippe et al. (2018) that the logic of time availability does not assume any difference in caregiving between men and women in the event of unemployment.

Therefore, we analysed who actually is the caregiver in a household and enriched the literature referring to time allocation theory and, as a new contribution, modelled childcare intensity by considering five different caregiver categories. Specifically, the analysis tested whether:

**Hypothesis 2a.** Single parents have the lowest chances of leaving unemployment status, whereas shared childcare between partners and the presence of two potential earners in a partnership compared with single parents increases the likelihood of undertaking a job that covers needs.

In particular, young children may substantially limit the number of working hours devoted to the labour market (Achdut, 2016). In addition, as mentioned above, a parent in families with young children (<3 years) is not obliged to be available to the labour market. We, therefore, assumed that:

**Hypothesis 2b.** Due to their limited opportunities for participation and the suspended obligation to work, parents of children younger than 3 years who need intensive care have fewer exits out of welfare dependency than parents of older children.

Persons who provide informal eldercare face the same competing time pressures between working and caregiving duties. However, while childcare is often a full-day task if external care is not available, the amount of care for the elderly may vary more depending on their level of need and on the amount of care required (fulltime care duties vs. minor support in coping with everyday life, e.g., cooking). Thus, in some respect, eldercare is more flexible and could possibly be more easily combined with labour market participation if the intensity of informal caregiving is low. How the decision between labour market participation and care is made probably depends significantly on the intensity of the care obligations to be met (see, e.g., Carmichael & Charles, 1998). Lilly et al. (2010) stated that several authors have attempted to determine the caregiving threshold beyond which participation in the labour force becomes

difficult. Some studies suggested a minimum threshold of 10 h/wk (Carmichael et al., 2010; Carmichael & Charles, 2003; Hohmeyer & Kopf, 2020). Hence, we assumed that:

**Hypothesis 2c.** Intensive eldercare (>10 h/wk) diminishes the chances of undertaking a sufficiently paid job, whereas less intensive eldercare has no influence.

Carmichael and Charles (2003), for example, argued that the intensity of caring impacts working opportunities differently depending on gender. They suggested a threshold of 20 h/week for women (see discussion on page 19).

As described above, according to Becker (1985), people with numerous caring responsibilities probably have less energy for paid work, and consequently, their labour market prospects should be worse than those of people with one caring obligation. As a novelty, we analysed the group of caregivers who shoulder a double burden. The so-called sandwich generation refers to middle-aged adults who care for both their ageing parents and their own children. At the moment, this group is small but might become larger because the age of women at the birth of their first child has increased in recent years, and life expectancy is rising. The likelihood of caring for children and elderly persons at the same time might increase. Our hypothesis was that:

**Hypothesis 2d.** Welfare recipients who care for children AND elderly individuals simultaneously have the lowest chances among all recipients of exiting dependency by working.

In addition to caregiving, other mechanisms can help to explain the persistence of welfare dependency and low employment chances. According to human capital theory (Becker, 1962), recipients of (long-term) welfare assistance subsequently suffer from a loss of acquired human capital due to the obsolescence of skills and ongoing technological change. As a result, the employability of these individuals decreases (Carmichael et al., 2010; Mincer & Polachek, 1974), and their chances of starting a job and exiting welfare dependency diminishes. This means that the duration of unemployment or times of nonemployment seems to impact employment chances.

In addition, a number of other factors appear to be important for the likelihood of integration into the labour market. Actually, as the literature showed, educational attainment impacts labour market participation. Studies that analysed transitions to employment



found that higher levels of education and skills increase transition rates (Dahl & Lorentzen, 2003; Hohmeyer & Kopf, 2020; Stahl & Schober, 2018; Zoch, 2020, for the case of Germany).

In addition to human capital resources, individual characteristics, such as age and health status, are also very important for labour market opportunities (Achdut, 2016; Hohmeyer & Kopf, 2020). We took these explanatory factors into account in our empirical analysis.

## DATA AND DESCRIPTIVE STATISTICS

### Dataset and sample selection

The information used for the empirical analysis was taken from the “Labour Market and Social Security” panel study (PASS; see <http://www.iab.de/en/befragungen/iab-haushaltspanel-pass.aspx>), a central dataset for research on the labour market and means-tested income support in Germany, established by the Institute of Employment Research (IAB) in 2006. The PASS is an annual household survey that consists of two subsamples. Subsample one comprises households with at least one person receiving SGB II benefits on the reference date (in July of each year). Beginning with Wave 2, refreshment samples, including persons in SGB II newly entering the panel, complement the panel data for each year. Subsample two is a stratified sample of private households, including households with members who receive unemployment benefits. PASS provides information on individual characteristics (qualifications, age, migration status, health status, and an approximation of nonemployment duration), family and household context (number and age of persons living in the household) and the caregiving situation. For a more detailed description of the database, see Trappmann et al. (2010).

For descriptive evidence, the two PASS samples (recipients and residential population of Germany) were used, and their structural composition was compared with regard to the relevant characteristics. For the analysis, Waves 1–11 were used, covering the years from 2006/2007 to 2017. For this analysis, all observations from recipients were used, except observations reporting phases of school attendance, vocational training, university attendance and phases of retirement, which were excluded because, for these periods, a transition from SGB II to employment is not designated. In sum, ~8000 observations were excluded (4000 episodes of schooling and training, and 4000 episodes of retirement). The resulting dataset contained 72,000 observations for all

waves. The regression results were based on welfare recipients who were interviewed in at least two subsequent waves. Because in wave 1 all respondents have the same status (receiving welfare benefits) and wave 11 is the reference wave, the analysed data, therefore, contained 52,000 observations of 14,400 persons.

For the descriptive analysis, cross-sectional information given in the first and second waves of the panel was used.

### Variables and empirical strategy

In this analysis, the probability of exiting welfare dependency by employment that covers needs (including full-time and part-time work) was estimated. An exit was defined as regaining independence from SGB II via employment covering needs observed over at least one survey wave following wave 1. Later, changes from employment to welfare and from welfare to employment were also taken into account.

The dependent variable was therefore binary and indicated the status of employment without welfare dependency. Analysing the chances of welfare recipients exiting dependency for suitable reintegration into the labour market, this article focused on the impact of informal caregiving and household composition.

The first explanatory variable was childcare and the corresponding caregiving situation in the household in its entirety of the addressed welfare recipient. To identify persons with childcare obligations, information on whether there are children living in the same household as the respondent, marital status and who provides the caregiving was used. Caregiving was differentiated by the possibility of sharing duties within a household<sup>1</sup>; therefore, different combinations of marital/household status and care provision were taken into account.

Regarding these combinations, as a novel contribution to the literature, five caregiving categories were addressed: (1) childcare by single parents; (2) childcare by only one person in a household of spouses/partners; (3) shared childcare by divorced persons or those living apart from a former spouse/partner, that is, two caregivers in separate households; (4) childcare shared by cohabiting spouses/partners, that is, two caregivers in the same household; and (5) no information about who provides childcare between two spouses/partners with children in the household. The definition of children was restricted to the ages of 0–15 years. As caring for young children is more time-consuming and, hence, could

<sup>1</sup>In households in need, every working-age person who is capable of work can reduce the neediness of the household (Eichhorst et al., 2010).

prevent labour market reintegration or welfare exit, we controlled for the age of the children by using three categories (<3, 3 to <6, ≥6).

The second variable referred to eldercare. To account for different caregiving intensities, caregiving for the elderly was differentiated into (1) <10 h/wk spent on caregiving and (2) >10 h/wk spent on caregiving.

A third care variable combined both types of caring: the intensity of childcare (alone/shared) and the intensity of eldercare obligations to account for the impact of multiple care obligations.

Additionally, a number of control variables were included that captured standard demographic characteristics, such as sex<sup>2</sup>, age (<40 years or >39 years)<sup>3</sup>, educational attainment (without occupational graduation or with occupational graduation/university degree) and migration background (yes or no). Furthermore, we controlled for the health status of respondents, captured by, for example, information about serious health problems. To account for periods out of the labour market, the time since last employment (nonemployment) was included, which, however, due to data limitations, could not be used as precise information on unemployment length.

A dummy variable for each year measured the economic cycle, and an east–west dummy variable captured cross-sectional regional labour market disparities and differing cultural ideals regarding parental/maternal employment (see Stahl & Schober, 2018). Furthermore, the year dummy captured changes in institutional settings, which might be of importance for welfare recipients' job search behaviour and their prospects of success.

As we are interested in the impact of the intensity of caregiving on employment status by exploiting the cross-sectional and longitudinal nature of the data, a multivariate panel logit model with random and fixed effects was applied to estimate the probability of being employed (see also Hohmeyer & Kopf, 2020). Random effects panel models use within-person variation over time and the variation (in caregiving) between individuals in which we are interested (Wooldridge, 2002).

However, an issue of methodological concern is the potential endogeneity of the caregiving variables in the random effects models. The (actual or assumed) chances of labour market reintegration may impact the decision regarding who performs the caregiving and to what extent. Welfare recipients with lower prospects of employment may select into caregiving (see Heitmüller, 2007). To allow

for potential endogeneity of caregiving, we estimated a fixed effects model that produces unbiased effects of the explanatory variables (for further details, see Appendices A and B) and conducted a Hausman test to check if there actually is a need to control for unobserved heterogeneity. The results (see Table B3) showed that the random effects model could have provided inconsistent estimates and that the absence of unobserved heterogeneity and related endogeneity could not be entirely excluded. However, the estimators in the fixed effects models disregarded households with a time-invariant mode of caregiving; therefore, we show the results of both models. They hardly differ.

Following Auspurg and Hinz (2011), we calculated, supplementary to the odds ratios, the average marginal effects of the regression models, which directly indicate the changes in effects on the dependent variable.

## Descriptive evidence

Comparative statistics show that welfare recipients differed from the overall population by age, qualifications and migration experience (see Table B1). Caregiving obligations were approximately equally distributed between the two groups. Approximately one-third of individuals provided care for children, and <10% of individuals provided care for elderly individuals. However, with respect to the latter, there is a striking difference: ~40% of the recipients who cared for an elderly person spent >10 h/wk on caregiving, whereas only one-third of the population engaged in caregiving to the same extent.

Furthermore, the detailed analysis of the structure of caregiving for children displayed in Figure 1 shows that the percentage of caregivers among the welfare recipients who were single parents is striking. More than 40% of the recipients with dependent children had to perform childcare alone. Only 7% of the overall population were single parents.

Compared with the overall population, it was relatively rare that welfare recipients lived in partnerships with either one or two caregivers (~13% in each case). The differences in the case of the small group of persons who cared for children and for the elderly simultaneously are also striking (see Table 1). A total of 3.7% of the population, compared with 5.7% of welfare recipients, shouldered this double burden of caregiving. Among this latter group, almost 60% of them received no support from partners when caregiving. In the overall population, this percentage amounted to 52.9%.

Table B2 shows that the percentage of respondents who entered employment was higher among recipients

<sup>2</sup>Approximately one third of the male but 60% of the female welfare recipients in our sample had caregiving obligations. Gender differences are more pronounced than in the general population.

<sup>3</sup>Some studies show that persons are more likely to engage in eldercare with increasing age (Meng, 2013).

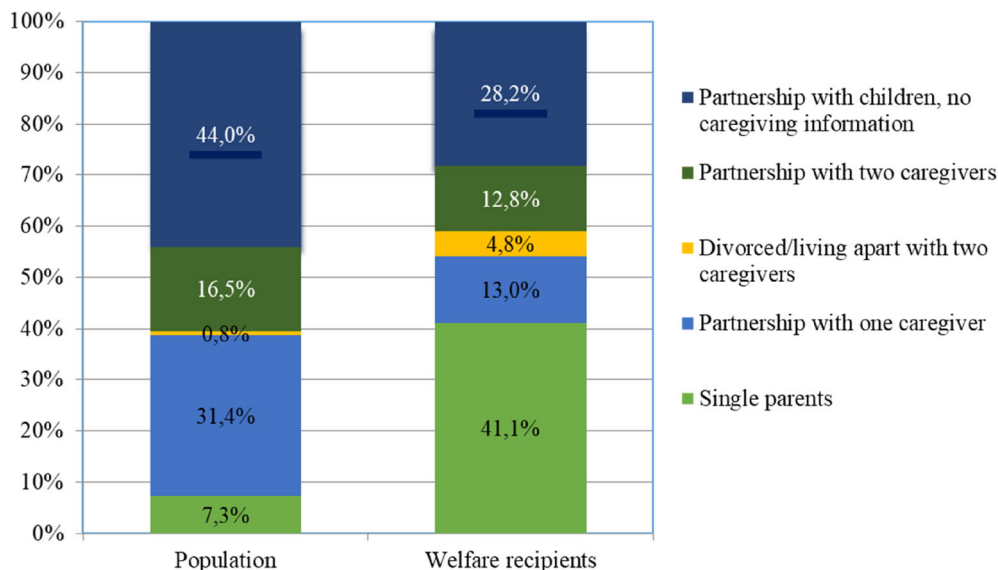


FIGURE 1 Descriptive statistics of caregiving for children by family situation and welfare receipt status. Source: “Labour Market and Social Security” panel study (PASS\_0617\_v2), own calculations.

TABLE 1 Percentage of recipients with two caregiving obligations and intensity of caring in Wave 1.<sup>a</sup>

Caring for children and elderly individuals	Population	Welfare recipients
Percentage of caregivers with 2 obligations (in 100,000)	3.7 (1000,3)	5.7 (1,88)
One child-caregiver, elder care <10 h/wk	33.5	36.1
One child-caregiver, elder care ≥10 h/wk	19.4	21.0
Two child-caregivers, elder care <10 h/wk	18.8	8.5
Two child-caregivers, elder care ≥10 h/wk	3.3	8.0
Childcare (no inform.), elder care <10 h/wk	21.5	16.7
Childcare (no inform.), elder care ≥10 h/wk	3.4	9.7

<sup>a</sup>In order to obtain representative results on the composition of the group of benefit recipients, cross-sectional weights are used to extrapolate to the entire population of benefit recipients at a survey time.

Source: “Labour Market and Social Security” panel study (PASS\_0617\_v2), own calculations.

without caregiving obligations than among welfare recipients who provided informal care. Additionally, we need to highlight the low share of single parents with new jobs (14.9%), particularly since welfare recipients were predominantly single parents. Persons who cared for the elderly for <10 h/wk had a lower probability of being employed (17%) than persons who did not have to

perform eldercare at all (22.2%). The percentage of employed persons providing care for the elderly for >10 h/wk was <10%.

## FINDINGS

### Childcare and employment

Table 2 summarises the results of the random panel and the fixed effects logit models and the average marginal effects (AMEs) of the corresponding logit models, which we focused on.

Summarising the results from the panel logit model (Column 2), childcare did not always seem to impede employment. The chances of exiting welfare via employment did not suffer for partners who lived apart and shared the caregiving job. This may be because the separated partner who was the primary caregiver (very often a woman) received alimony from the former partner but was still obliged to work if the child was at least 3 years of age. In contrast to this caregiving constellation, the model showed a particularly low odds ratio for exiting welfare dependency for single parents. In terms of average marginal effects (Column 3), the probability of being employed was 10 percentage points lower for single parents than for those without childcare obligations.

The fixed effects model predominantly confirmed the previous estimation of the random effects model. The negative impact of being a single parent was even more pronounced in this model (−22 percentage points, in Column 7). Furthermore, in families with two caregivers, the



TABLE 2 Results of panel logit regression with fixed effects for the probability of being employed (odds ratios and average marginal effects [AMEs]).

	Panel logit		FE panel logit		Panel logit child and elder care		FE panel logit child and elder care	
	Odds ratio	AME	Odds ratio	AME	Odds ratio	AME	Odds ratio	AME
<b>Childcare arrangements</b>								
No childcare (reference)								
Single parents	0.23*** (0.04)	-0.10*** (0.01)	0.25*** (0.05)	-0.22*** (0.04)				
Partnership with one caregiver	0.58** (0.13)	-0.04** (0.02)	0.62* (0.16)	-0.08* (0.04)				
Divorced/living apart with two caregivers	1.44 (0.34)	0.03 (0.02)	1.04 (0.26)	0.01 (0.04)				
Partnership with two caregivers	0.56*** (0.11)	-0.04*** (0.01)	0.55*** (0.12)	-0.09*** (0.04)				
Partnership with children, no caregiving information	1.34 (0.24)	0.02 (0.01)	0.86 (0.17)	-0.02 (0.03)				
<b>Elder care arrangements</b>								
No elder care (reference)								
Elder care <10 h/wk	0.76** (0.09)	-0.02** (0.01)	0.79** (0.10)	-0.04** (0.02)				
Elder care ≥10 h/wk	0.40*** (0.06)	-0.06*** (0.01)	0.64*** (0.11)	-0.07*** (0.03)				
<b>Child and elder care</b>								
No informal care (reference)								
Childcare with partner			0.72*** (0.13)	-0.02*** (0.01)	0.64** (0.13)	-0.07** (0.03)		
Childcare solely			0.28*** (0.05)	-0.09*** (0.01)	0.31*** (0.06)	-0.19*** (0.04)		
Partnership with child, no caregiving information			1.31 (0.23)	0.02 (0.01)	0.84 (0.17)	-0.03 (0.03)		
Elder care <10 h/wk			0.74** (0.10)	-0.02** (0.01)	0.74** (0.11)	-0.05** (0.02)		
Elder care ≥10 h/wk			0.41*** (0.07)	-0.06*** (0.01)	0.66** (0.14)	-0.07** (0.03)		
Two child-caregivers; elder care <10 h/wk			0.25*** (0.12)	-0.10*** (0.03)	0.30** (0.17)	-0.19** (0.09)		
Two child-caregivers; elder care ≥10 h/wk			0.16*** (0.11)	-0.13*** (0.045)	0.23* (0.17)	-0.24* (0.12)		
One child-caregiver; elder care <10 h/wk			0.35*** (0.12)	-0.07*** (0.02)	0.45*** (0.14)	-0.15*** (0.06)		
One child-caregiver; elder care ≥10 h/wk			0.07*** (0.03)	-0.18*** (0.03)	0.13*** (0.06)	-0.33*** (0.08)		
Childcare (no inform.); elder care <10 h/wk			0.86 (0.40)	-0.01 (0.03)	0.53 (0.23)	-0.10 (0.07)		

(Continues)

TABLE 2 (Continued)

	Panel logit		FE panel logit		Panel logit child and elder care		FE panel logit child and elder care	
	Odds ratio	AME	Odds ratio	AME	Odds ratio	AME	Odds ratio	AME
Childcare (no inform.): elder care ≥10 h/wk					1.13 (0.53)	0.01 (0.03)	1.05 (0.55)	0.01 (0.08)
Age of child								
No child (reference)								
Age of child <3 years	0.44*** (0.08)	-0.06*** (0.01)	0.50*** (0.10)	-0.11*** (0.03)	0.47** (0.08)	-0.05*** (0.01)	0.52*** (0.10)	-0.11*** (0.03)
Age of child 3 to 6 years	1.03 (0.18)	0.00 (0.01)	0.95 (0.18)	-0.01 (0.03)	1.04 (0.18)	0.00 (0.01)	0.95 (0.18)	-0.01 (0.03)
Age of child ≥6 years	1.15 (0.17)	0.01 (0.01)	1.08 (0.18)	0.01 (0.03)	1.14 (0.17)	0.01 (0.01)	1.07 (0.18)	0.01 (0.03)
Controls								
Female	0.78*** (0.07)	-0.02*** (0.01)			-0.78*** (0.07)	-0.02*** (0.01)		
Age >49 years	0.62*** (0.05)	-0.03*** (0.01)	1.28* (0.17)	0.04* (0.02)	0.62*** (0.05)	-0.03*** (0.01)	1.27** (0.17)	0.04** (0.02)
With formal qualification	12.13*** (1.29)	0.17*** (0.01)	5.52*** (1.04)	0.27*** (0.02)	12.08*** (1.28)	0.17*** (0.01)	5.48*** (1.03)	0.27*** (0.02)
Without migration background	2.77*** (0.27)	0.07*** (0.01)			2.75 (0.27)	0.07 (0.01)		
Good health situation	3.39*** (0.22)	0.08*** (0.00)	0.35*** (0.12)	0.09*** (0.01)	3.38*** (0.22)	0.08*** (0.00)	1.74*** (0.12)	0.09*** (0.01)
Dummy for East Germany	0.81** (0.08)	-0.01** (0.01)	0.35*** (0.13)	-0.17*** (0.06)	0.82** (0.08)	-0.01** (0.01)	0.35*** (0.13)	-0.17*** (0.06)
Time of non-employment	-1.00***	0.00*** (0.00)	1 (0)	0.00 (0.00)	1.00*** (0.00)	0.00*** (0.00)	1.00 (0.00)	0.00 (0.00)
Wave 11 (reference)								
Wave 2	0.03*** (0.00)	-0.32*** (0.01)	0.01*** (0.00)	-0.74*** (0.06)	0.01*** (0.00)	-0.32*** (0.01)	0.01*** (0.00)	-0.75*** (0.06)
Wave 3	0.04*** (0.01)	-0.24*** (0.01)	0.03*** (0.00)	-0.56*** (0.05)	0.03*** (0.00)	-0.24*** (0.01)	0.03*** (0.00)	-0.57*** (0.04)
Wave 4	0.07*** (0.01)	-0.22*** (0.01)	0.04*** (0.00)	-0.52*** (0.04)	0.04*** (0.00)	-0.22*** (0.01)	0.04*** (0.00)	-0.52*** (0.04)
Wave 5	0.12*** (0.01)	-0.18*** (0.01)	0.07*** (0.01)	-0.41*** (0.04)	0.07*** (0.01)	-0.18*** (0.01)	0.07*** (0.01)	-0.42*** (0.03)
Wave 6	0.16*** (0.02)	-0.15*** (0.01)	0.12*** (0.01)	-0.34*** (0.03)	0.12*** (0.01)	-0.15*** (0.01)	0.12*** (0.01)	-0.34*** (0.03)
Wave 7	0.20*** (0.02)	-0.13*** (0.01)	0.16*** (0.02)	-0.29*** (0.03)	0.16*** (0.02)	-0.13*** (0.01)	0.16*** (0.01)	-0.29*** (0.03)
Wave 8	0.32*** (0.03)	-0.11*** (0.01)	0.19*** (0.02)	-0.26*** (0.03)	0.20*** (0.02)	-0.11*** (0.01)	0.19*** (0.02)	-0.26*** (0.02)
Wave 9	0.55*** (0.04)	-0.08*** (0.01)	0.31*** (0.03)	-0.18*** (0.02)	0.32*** (0.03)	-0.08*** (0.01)	0.31*** (0.03)	-0.19*** (0.02)
Wave 10	0.55*** (0.04)	-0.04*** (0.00)	0.56*** (0.05)	-0.09*** (0.02)	0.55*** (0.04)	-0.04*** (0.00)	0.56*** (0.05)	-0.09*** (0.02)
Constant					0.00*** (0.00)			
Observations	52.13	52.13	16.62	16.62	52.13	52.13	16.62	16.62
Number of group	14.15	14.15	3.28	3.28	14.15	14.15	3.28	3.28

TABLE 2 (Continued)

	Panel logit		FE panel logit		Panel logit child and elder care		FE panel logit child and elder care	
	Odds ratio	AME	Odds ratio	AME	Odds ratio	AME	Odds ratio	AME
Wald Chi	2034.64***							
LR chi <sup>2</sup> (21)			3288.95***		2026.87***		3262.39***	
Insig2u		3.04 (0.04)						

Note: Standard errors in parenthesis.

\*\*\*p < 0.01. \*\*p < 0.05. \*p < 0.1.

Source: "Labour Market and Social Security" panel study (PASS\_0617\_v2), own calculations.

time resources required for caregiving could be divided between the partners, and the chances of working were better than for single parents, although caregiving also prevented taking up employment in these constellations. Those living in a partnership with one caregiver also had lower chances of entering employment than did those with no childcare responsibilities.

The age of the children cared for was also important. We found that caring for children younger 3 years lowered the chances of taking up employment by 5 percentage points. However, this result was valid only for women, as showed by the results of models differentiated by sex (results are available on request from the authors).

### Eldercare and employment

The results of the panel logit model with random effects suggest that the effect of spending <10 h/wk on eldercare was significant and that even a small amount of time spent on care for the elderly reduced the probability of being employed by 2 percentage points compared with persons with no eldercare obligation. This contradicts theoretical arguments that less intensive care below the mentioned threshold should not impact the likelihood of exiting welfare reciprocity (Carmichael & Charles, 1998, 2003).

Consistent with our assumptions, intensive caregiving for elderly individuals of >10 h/wk lowered the chances of employment by ~6 percentage points compared with persons with no eldercare responsibilities. The size of this coefficient was more pronounced than the coefficient for less intensive eldercare. The negative coefficients of both forms of eldercare even increased in the fixed effects model.

### Childcare, eldercare and employment

Models that analysed in detail the intensity of caregiving by combining both forms of caregiving emphasise the previous results. One caring obligation was sufficient to diminish the chances (child and eldercare to almost the same degree) of employment even if caring was shared with the partner and was less intensive. If welfare recipients had to provide both types of caring, their chances of entering employment diminished significantly. However, the dampening effect of the double burden of caring was not as pronounced as expected for welfare recipients who had to care for children alone and performed less intensive eldercare. This might be because a much higher percentage of individuals in this group had older children than in the other groups. Welfare recipients with the

most intensive caring constellation, that is, caring for children alone and engaging in eldercare for >10 h/wk, were the most concerning group: the likelihood of starting a job was 18 percentage points lower than for those with no care obligations.

## Other control variables

Finally, we consider the effect of the other control variables on leaving welfare assistance. Contradicting the usual argument that human capital diminishes with ongoing periods of nonemployment and hence employment chances decrease with time, we found a positive impact of nonemployment duration on employment chances. However, the size of this effect was virtually zero and was insignificant in the fixed-effect model.<sup>4</sup> Consistent with theoretical assumptions, the role of human capital holding formal qualifications positively impacted the probability of being employed (17 percentage points). Good health and low age also increased the chances of being employed. However, the sign of the coefficient of age changed in the fixed effects model. This may indicate some bias in the random effects model, but we should trust the results of this model because there was hardly any variation concerning age at the individual level, and the effect in the fixed effects model was identified by only a few observations.

## DISCUSSION

The empirical analysis clearly shows that child and eldercare obligations in an array of family contexts significantly impact the chances of employment (see also Achatz & Trappmann, 2011; Hohmeyer & Kopf, 2020), and the effects are rather strong compared with other analyses (reviewed in Bauer & De Sousa-Poza, 2015). Therefore, our first hypothesis (H1) that childcare and eldercare are barriers to exiting welfare dependency into employment was supported.

However, the scale of the negative impact depends on the number of (potential) caregivers in households and their related time capacities. According to the theory of time allocation and regarding our research question, which considered the intensity of caring, often missed in the literature (Lilly et al., 2010), we found that the more time-consuming the caregiving obligation is, the lower the chances of gaining employment and exiting welfare

dependency. With regard to the four analysed dimensions of intensity, this can be demonstrated first by the strong negative impact on employment prospects for single parents. Consistent with H2a, the size of this coefficient was the most pronounced among all coefficients for childcare arrangements. Single parents are simply not able to hand over responsibility for caregiving or other duties in the household.

Additionally, in line with H2a, there was an unfavourable effect for partnerships with children, but this effect was smaller. In this context, we should keep in mind that these results might also be because, in partnerships, there are not only two possible carers but also two possible earners. Thus, for a second earner in a couple household, taking up a (part-time) job might be sufficient for the household to leave the receipt of benefits. For single parents or single earners in a partnership, even the salary from a full-time job may not be enough. Lietzmann (2014) similarly found that the effects of care responsibilities vary in size between single mothers and mothers living with a partner.

As expected from H2b, time-intensive care for children aged under 3 years significantly reduced employment opportunities. However, with respect to this kind of childcare, we detected a pronounced negative impact on transition rates for women but no effect for men (results are available from the authors upon request). The latter result contradicts assumptions of the time allocation hypothesis (see van der Lippe et al., 2018). An explanation could be that welfare recipients (possibly more often than the general population) share traditional gender role models, which might be traced back to the fact that among parents with children under the age of three, predominantly women are not available for the labour market because they are not obliged to due to child care responsibilities (Social Code II, Art 10). In these households in which parents receive welfare benefits, men are less likely to make use of the legal provision (Bähr et al., 2020).

In addition, the age of children under 3 years might be relevant for women's work prospects but not for those of men because in the first years after birth, mothers may invest more time in childcare than fathers even if they share caregiving duties. The argument that women commit more time to childcare could also help explain the dampening effect of female gender on the probability of exiting welfare dependency that occurred even after taking into account the different caring constellations. Unfortunately, our data do not allow us to differentiate the hours spent on childcare. This is one of several limitations that need to be considered.

The question of gender inequalities regarding the hours spent on caring obligations and work on the labour market will become even more important in view of the

<sup>4</sup>In contrast, there was a significant impact of economic cycles that indicated better employment chances when the economic situation improved (2010–2017).

consequences of the COVID-19 pandemic. If the increase in childcare needs during closures of schools and daycare centres had a stronger negative impact on women's labour supply, their employment opportunities might have decreased in the course of the crisis more strongly compared with those of men.

A growing body of international empirical studies documented the nuanced impacts of the pandemic on how couples shared care work. This recent research showed ambiguous results (for an overview, see Jessen et al., 2022). For Germany, some studies found that men spent more time on caregiving that is related to changes in work arrangements and rising possibilities of teleworking (Berghammer, 2022; Jessen et al., 2022, for Austria), but most studies agree that mothers still took on the central role in childcare during the pandemic. Others detected that unpaid care intensity among (unemployed) women and the corresponding gender inequalities had increased (Camiletti & Nesbitt-Ahmed, 2022; Corsi & Ilkcaracan, 2022; Hank & Steinbach, 2021).

The results related to eldercare contradicted the argument of H2c, indicating that already a small amount of time spent on care for older individuals impacts the probability of being employed. However, the size of the coefficient was rather small compared with time-consuming eldercare of >10 h/wk. The latter result was supported by the recent findings of Hohmeyer and Kopf (2020). As in our sample, the share of eldercare providers devoting >10 h/wk to eldercare was relatively high; consequently, the employment prospects among caregivers of eldercare were unfavourable. Furthermore, some authors (e.g., Carmichael & Charles, 2003) suggested different thresholds for men (10 h/wk) and women (20 h/wk). Thus, we differentiated the models by gender to underpin our result. The results showed that even 5–10 h/wk spent on eldercare lowered employment chances slightly. However, this finding was not valid for female caregivers (results are available from the authors upon request).

This result could probably be explained by diverging patterns of working time of men and women. Missing information on this aspect is a further limitation of the data. Nevertheless, on average, women more frequently work part-time than men instead of working fulltime (Bundesagentur für Arbeit, 2019), and part-time work can more easily be combined with caring if caring is not too time intensive. However, working part-time can become a path in the long run towards welfare dependency because such jobs often cannot cover needs, which makes it difficult to overcome welfare dependency permanently. In this context, Kopf and Zabel (2016) showed that activation programmes in Germany are also often unhelpful because they replicate rather than challenge women's previous labour market attachment relative to their partner.

Referring to the discussion of gender roles, we found that the negative impact of caregiving is, on the whole, gender neutral. Two exceptions need to be noted: (1) Childcare for children aged under 3 years had no effect on the employment prospects of men but had an impact on those of women; and (2) Less intensive eldercare (<10 h/wk) lowered the chances of employment for men but not for women.

Furthermore, the new results presented above concerning the double burden of caring alone for both children and elderly individuals support H2d and show that labour market integration in this constellation seems almost impossible. At present, this problem relates only to a small group of recipients, but due to ageing societies and increasing demands for care, this group will probably grow in size (Heitmüller & Michaud, 2006; Hohmeyer & Kopf, 2020).

Active labour market policy in Germany that aimed at activating unemployed individuals to enhance labour market participation only in some respects accounts for the limitations caregiving presents to welfare recipients. Social institutions pay childcare costs for welfare recipients due to their lack of financial resources if care activities have to be outsourced. However, in Germany, the limited availability of childcare used to be a large problem, especially for welfare recipients. They usually do not have their own network that provides information about available places or alternative care options. The welfare system in Germany often fails to close this gap because, as described by Bruckmeier et al. (2020), the lack of close interaction and networks with social institutions providing family services is a weakness of the German system.

Active labour market policy addresses the problem of limited time capacities for working due to the caregiving obligations of welfare recipients because part-time programmes have emerged in recent years. In fact, however, these programmes have only been used to a small extent thus far, as official statistics show: Only 12% of welfare recipients completed part-time training in 2021. Overall, there is still room for labour market policy to take better account of the needs of care recipients.

We enriched the discussion about caregiving intensity by exploring different thresholds beyond labour market participation that could become difficult. Contrary to the literature (Lilly et al., 2007 for an overview), our results suggest that for welfare recipients, this threshold could be lower than for the population as a whole that normally is investigated. A likely cause might be the fact that welfare recipients also differ from the population by some other characteristics that are unfavourable for labour market participation, such as low educational attainment or worse health status (see also Achdut, 2016). Moreover, because each additional obstacle diminished their chances



disproportionately (see Achatz & Trappmann, 2011), compared with the general population, less intensive levels of caregiving are probably sufficient to reduce their chances of integration.

Referring to theories of human capital, a refined picture emerges. On the one hand, we found no evidence for the assumption of diminishing human capital due to longer periods of unemployment. However, we must bear in mind that these welfare recipients already experienced longer periods of dependency in wave 1. On the other hand, human capital seems to be of the utmost importance for welfare recipients to exit dependency by working (see also Stahl & Schober, 2018). This result implies chance and impasse simultaneously. Theoretically, the positive impact of holding a formal qualification can compensate for the negative impact of caregiving obligations. However, the percentage of less qualified welfare recipients is very high (see descriptive statistics Table B1), and time restrictions from caregiving duties are also relevant for gaining qualifications.

## CONCLUSION

Existing empirical research on the relation between caregiving and working has predominantly focused on hours or changes in the labour supply of employed persons while ignoring welfare recipients. We added a new perspective to this research by studying the impact of different caregiving constellations on the chances for welfare recipients to exit welfare via employment.

It is clearly demonstrated that reduced time availability due to intensive caregiving is related to poor labour market prospects among welfare recipients in Germany. The situation is rather difficult for single parents and for recipients with time-intensive eldercare obligations. However, the worst employment prospects occurred for persons engaged in both childcare and eldercare, a small group but one probably increasing in size due to the ageing population. This is a group among unemployed individuals that has not been previously analysed.

Considering this situation, it is even more important that the arrangement of private and public caregiving is well balanced to guarantee that informal care and the integration of welfare benefits are not impeded. One could argue that the contributions of unemployed individuals engaged in informal caregiving are appreciable and address societal concerns if unemployed individuals who may have more time resources than the working population perform caring. However, this implies greatly limiting chances to reduce welfare dependency, which is also socially desirable. In addition, as the analysis reveals, the time spent on caring can be more influential for the

labour market participation of unemployed persons than for the labour supply of the population as a whole.

The analysis used gender-neutral indicators for caregiver constellations but enriched gender debates and time allocation theories. The results suggest that in some respects, women obviously need more support; they accounted for the largest numbers of single parents and of caregivers to young children who need intensive care.

Recent empirical results showed that the COVID-19 pandemic could have worsened the situation for women. They were overrepresented in service sectors hard-hit by the pandemic resulting in more severe job loss for female workers (Corsi & Ilkharacan, 2022). Further, because of dominant traditional gender roles, the extra domestic child care due to the closure of education and care facilities is probably substantially larger for unemployed women than for unemployed men (Hank & Steinbach, 2021). Furthermore, the pandemic has altered family life and labour market access for both sexes. Thus, there is room for future research to analyse the impact of the interaction of the COVID-19 pandemic and caring obligations on the risk of long-term unemployment or the chances of ending it.

However, other factors might also exist, such as varying financial support to households that may correlate with job search activity, for which we do not control.

In short, the placement of welfare recipients in the labour market should follow an approach that considers family constellations and care arrangements from a comprehensive perspective.

In addition to the possibility of part-time qualification, benefits have in recent years been created in the course of the measures for activation and occupational integration according to § 16 (1) SGB II in conjunction with § 45 SGB III, which are intended to take into account the special situation of caregiving benefit recipients by providing childcare support. As our results showed, obviously, these measures and their dissemination are not yet sufficient to compensate for the special disadvantages of carers. Moreover, eldercare was not respected in these measures. For this group of persons, the employment service only provides them with further information concerning the counselling services of the municipalities. Survey results showed that only ~2% of carers received help from the Job Centre in finding carers (Bähr et al., 2018). It would be more appropriate if eldercare were also financially supported in a similar way as childcare. These problems of sufficient and affordable childcare and eldercare may need to be addressed more comprehensively.

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### CONFLICT OF INTEREST STATEMENT

The authors declared no potential conflicts of interest with respect to the authorship and/or publication of this article.

### DATA AVAILABILITY STATEMENT

The dataset is available by the Institute of Employment research (IAB): <http://www.iab.de/en/befragungen/iab-haushaltspanel-pass.aspx>. For the analysis, waves 1 to 11 are used, PASS\_0617\_v2.

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## APPENDIX A

An issue of methodological concern is the potential endogeneity of the caregiving variables in the random effects models. The (actual or assumed) chances of labour market reintegration may impact the decision regarding who performs the caregiving and to what extent. Welfare recipients with lower prospects of employment may select into caregiving (see Heitmüller, 2007). In the literature, unobserved heterogeneity that can emerge in the context of caregiving is often discussed. Johnson and Lo Sasso (2006), who control for both endogeneity and unobserved heterogeneity, and van Houtven et al. (2013), who use instrumental variables, show negative effects of caregiving (on working hours). In contrast, there are also studies that find no evidence of effects on employment after controlling for unobserved individual heterogeneity (see, for an overview, Bauer & De Sousa-Poza, 2015). In cases where the caregivers are less motivated to start employment, the coefficients in the applied random effects models may be biased due to unobserved heterogeneity.

To test if there is a need to control for unobserved heterogeneity, we conducted a Hausman test. The results (Table B3) showed that the random effects model could provide inconsistent estimates and that the absence of unobserved heterogeneity and related endogeneity could not be entirely excluded. Hence, a fixed effects model was estimated that produces unbiased effects of the explanatory variables, as the model captured unobserved time-invariant characteristics, such as motivation or other obstacles (e.g., debts). However, the estimators in the fixed effects models disregarded households with a time-invariant mode of caregiving.

The risk of bias due to unobserved characteristics of recipients, such as the motivation to work, seemed less serious in our analysis because the results compared with the fixed-effects models were very robust.

This might be traced back to the design of our sample because in Wave 1, all respondents received welfare benefits.

Hence, most likely, the problem of endogeneity was less severe in this analysis because a specific sample of people who were initially unemployed was analysed, and the analysis took advantage of the longitudinal nature of the data (see also Hohmeyer & Kopf, 2020).

## APPENDIX B

A total of 22.2% of recipients who did not care for children exited welfare dependency via employment, compared with 14.9% of single-parent beneficiaries.

**TABLE B1** Descriptive statistics of the welfare recipients and overall population, Wave 1<sup>a</sup>, in %.

	Population aged 15–65 years	Recipients aged 15–65 years
Male	50.5	49.5
<40 years of age	41.1	50.4
Low skill	26.0	42.2
Migrants	22.0	33.1
No caregiving	60.3	60.7
Childcare	32.5	31.3
Elder care	7.1	8.0
Elder care <10 h/wk	67.1	59.8
Elder care ≥10 h/wk	32.9	40.2
Total number in millions	35.5	3.3

<sup>a</sup>To obtain representative results on the composition of the group of benefit recipients, cross-sectional weights are used to extrapolate to the entire population of benefit recipients at a survey time.

Source: “Labour Market and Social Security” panel study (PASS\_0617\_v2), own calculations

**TABLE B2** Percentage of recipients with new jobs in Wave 2<sup>a</sup> by caregiving status and household structure, in %.

	Caring for children	Caring for elderly
No obligation	22.1	22.2
Single parents	14.9	
Partnership with one caregiver	19.9	
Divorced/living apart with two caregivers	29.6	
Partnership with two caregivers	9.6	
Partnership with children, no caregiving information	31.4	
Caregiving for <10 h/wk		17.0
Caregiving for >10 h/wk		9.8

<sup>a</sup>In order to obtain representative results on the composition of the group of benefit recipients, cross-sectional weights are used to extrapolate to the entire population of benefit recipients at a survey time.

Source: “Labour Market and Social Security” panel study (PASS\_0617\_v2), own calculations.

Sharing caregiving was accompanied by higher percentages of employment only for divorced partners. The percentage of respondents in employment in this group was even higher than that of respondents without caring obligations. This percentage was also

TABLE B3 Results of Hausman test.

	Childcare and elder care separately			Childcare and elder care simultaneously		
	Fixed-effects		Random-effects	Fixed-effects		Random-effects
	Coefficients	Standard errors	Coefficients	Standard errors	Coefficients	Standard errors
<b>Childcare arrangements</b>						
No childcare (reference)						
Single parents	-1.73	0.11	-1.48	0.12		
Partnership with one caregiver	-0.48	0.06	-0.54	0.14		
Divorced/living apart with two caregivers	0.04	-0.32	0.36	0.12		
Partnership with two caregivers	-0.59	-0.1	-0.58	0.12		
Partnership with children, no caregiving information	-0.15	-0.44	0.29	0.10		
<b>Elder care arrangements</b>						
No elder care (reference)						
Elder care <10 h/wk	-0.23	0.04	-0.27	0.05		
Elder care ≥10 h/wk	-0.45	0.47	-0.92	0.09		
<b>Child and elder care</b>						
No informal care (reference)						
Two child-caregivers					-0.44	-0.11
One child-caregiver					-1.17	0.10
Partnership with child, no caring information					-0.17	-0.45
Elder care <10 h/wk					-0.31	0.00
Elder care ≥10 h/wk					-0.42	0.47
Two child-caregivers; elder care <10 h/wk					-1.20	0.19
Two child-caregivers; elder care ≥10 h/wk					-1.47	0.37
One child-caregiver; elder care <10 h/wk					-0.90	0.14
One child-caregiver; elder care ≥10 h/wk					-2.06	0.55
Childcare (no inform.); elder care <10 h/wk					-0.63	-0.47
Childcare (no inform.); elder care ≥10 h/wk					0.05	-0.08
<b>Age of child</b>						
No child (reference)						
Age of child <3 years	-0.69	0.12	-0.81	0.10	-0.66	0.10
						0.09



TABLE B3 (Continued)

Childcare arrangements	Childcare and elder care separately				Childcare and elder care simultaneously			
	Fixed-effects		Random-effects		Fixed-effects		Random-effects	
	Coefficients	Standard errors	Coefficients	Standard errors	Coefficients	Standard errors	Coefficients	Standard errors
Age of child 3 to 6 years	-0.05	-0.09	0.03	0.08	-0.05	-0.09	0.04	0.08
Age of child ≥6 years	0.08	-0.07	0.14	0.06	0.06	-0.07	0.13	0.06
Controls								
Female								
Age >49 years	0.25	0.72	-0.47	0.11	0.24	0.71	-0.48	0.11
With formal qualification	1.71	-0.79	2.50	0.17	1.70	-0.79	2.49	0.17
Good health situation	0.56	-0.67	1.22	0.03	0.55	-0.67	1.22	0.03
Dummy for East Germany	0.00	0.00	0.00	0.00	-1.05	-0.85	-0.20	0.35
Time of non-employment	-1.05	-0.83	-0.21	0.35	0.00	0.00	0.00	0.00
Wave 11 (reference)								
Wave 2	-4.66	-0.01	-4.56	0.06	-4.68	-0.01	-4.67	0.06
Wave 3	-3.51	-0.05	-3.46	0.05	-3.53	-0.05	-3.47	0.05
Wave 4	-3.25	-0.06	-3.19	0.05	-3.26	-0.06	-3.20	0.05
Wave 5	-2.60	0.00	-2.60	0.04	-2.59	0.00	-2.59	0.04
Wave 6	-2.14	-0.01	-2.13	0.04	-2.15	-0.01	-2.14	0.04
Wave 7	-1.82	-0.01	-1.82	0.04	-1.83	-0.01	-1.83	0.04
Wave 8	-1.64	-0.02	-1.62	0.03	-1.65	-0.02	-1.62	0.03
Wave 9	-1.16	-0.03	-1.13	0.03	-1.16	-0.03	-1.14	0.03
Wave 10	-0.58	0.02	-0.60	0.03	-0.58	0.02	-0.60	0.03
Constant								
Observations	52,132		16,618		52,132		16,618	
Number of group								
Chi <sup>2</sup> (24)		748,22					551,35	
Prob > chi <sup>2</sup>		0					0	

Source: "Labour Market and Social Security" panel study (PASS\_0617\_v2). Own calculations.

higher for partners for whom there is no information about who performed childcare than for respondents who did not engage in any care work. The descriptive results were at least in part unexpected; nevertheless, we need to highlight the low share of single parents with new jobs, particularly since welfare recipients were predominantly single parents.

Furthermore, there were large differences between intensive and less intensive care for elderly individuals. Persons who care for the elderly for <10 h/wk had a lower probability of being employed (17%) than persons who did not have to perform elder care at all (22.2%). The percentage of employed persons providing care for the elderly for >10 h/wk was <10%.