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## Article

# Work-family conflict, self-reported general health and work-family reconciliation policies in Europe: Results from the European Working Conditions Survey 2015

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## ABSTRACT

The increasing labor market participation of women in Europe leads to many women and men having to reconcile paid work with family work and thus reporting work-family conflict (WFC). WFC is related to different dimensions of health. In the present article, we analyzed the role different reconciliation policies among European countries may play regarding WFC and its association with self-reported health.

The analyses are based on data from Eurofound's European Working Conditions Survey 2015. The working populations from 23 European countries aged between 18 and 59 with at least one child up to 18 years of age are included (n = 10,273). Weighted logistic regression was applied to estimate the association between WFC and self-reported general health (SRH). Using multilevel models, country-level variations in the association of individual-level WFC and health were calculated. In a second step, the effect of country-level reconciliation policies on WFC was examined (adjusted for age, sociodemographic and occupational characteristics).

The odds ratio for moderate to very poor SRH is 2.5 (95% CI: 1.92–3.34) for mothers with high WFC compared to mothers with low WFC. For fathers with high WFC, the adjusted odds ratio is also 2.5 (95% CI: 1.80–3.37). Between countries, the association between WFC and health is similar. Country-level parental leave policies, the use of formal childcare and mothers' labor market participation are associated with reduced WFC in Europe.

In conclusion, the results reveal a strong association between WFC and SRH in Europe. The multilevel analyses show that certain reconciliation policies have an impact on the prevalence of WFC, with different results for mothers and fathers. Mothers in particular can be supported by sufficient maternal leave and formal care for children. These are tangible policy approaches for reducing WFC and may thus improve health in Europe.

## 1. Introduction

The share of employed women in the European Union (EU) has increased slowly but steadily over the past two decades, reaching 66.6% at the end of 2017. By comparison, the average male employment rate in the EU is 78.1%. Compared to men, women are more likely to be employed part-time and work more often in low-paid sectors. If the hours for paid work and family work are added together, women work on average six hours longer per week than men. They also accept more breaks in their employment biographies, for example for child-birth and subsequent periods of parental leave (European Commission, 2018). At the same time, the proportion of dual-earner couples in

western societies is rising (Hill, Yang, Hawkins, & Ferris, 2004). Thus, many women and men reconcile paid and family work, e.g. taking care of children and relatives in need of care (Hämmig, 2014; McGinnity & Whelan, 2009; Notten, Grunow, & Verbakel, 2017).

In recent years, a number of European countries have enacted new laws to improve the reconciliation of paid work and family roles, in which, for example, parental leave, formal childcare and the care of relatives are newly regulated (MacInnes, 2006). At the same time, the demands from employment are changing; workplace flexibility is increasing in some sectors and job insecurity also rises in many countries (Hill et al., 2004). However, national reconciliation policies differ considerably between European states (McGinnity & Whelan, 2009;

Abbreviations: WFC, Work-family conflict; SRH, self-reported general health; EWCS, European Working Conditions Survey; EU, European Union

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Waldfoegel, 2006). Moreover, the cultural and social backgrounds and gender norms vary (Notten et al., 2017).

### 1.1. Reconciliation of paid work and family roles

Difficulties in reconciling paid work and family roles are widely referred to as work-family conflict (WFC). WFC can be defined as an inter-role conflict in which the requirements from roles in paid and family work are not compatible (Greenhaus & Beutell, 1985). Theoretically, the concept of the WFC is rooted in the role strain theory (Demerouti, Martinez Corts, & Boz, 2013; Frone & Rice, 1987). WFC can work in two directions: work-to-family conflicts arise when demands at work have a negative effect on family life; family-to-work conflicts arise when demands at the family level conflict with professional life (Greenhaus & Beutell, 1985).

However, WFC is measured with a variety of different scales ranging from single-item questions to instruments with 16 items and more and some publications are based on specific study populations. These differences make it difficult to compare the available results on WFC and health in Europe (Borgmann, Rattay, & Lampert, 2019).

### 1.2. Work-family conflict and health-related outcomes

In addition to impairments to working ability and family life, health impairments are also reported as consequences of WFC (Amstad, Meier, Fasel, Elfering, & Semmer, 2011; Greenhaus, Allen, & Spector, 2006). Literature reviews by Mesmer-Magnus and Viswesvaran (2005) and Greenhaus et al. (2006) consolidate evidence for the association between WFC and health. A recent review on European publications revealed interrelations between WFC and general, mental and physical health, health behavior, health services utilization, and sleep (Borgmann, Rattay, & Lampert, 2019). Causal associations based on longitudinal data can also be found for the association between WFC and self-reported general and mental health (Cullati, 2014; Kinnunen, Feldt, Geurts, & Pulkkinen, 2006; Leineweber, Baltzer, Magnusson Hanson, & Westerlund, 2013; Oshio, Inoue, & Tsutsumi, 2017; Rantanen, Kinnunen, Feldt, & Pulkkinen, 2008).

With regard to differences in health effects by gender, Greenhaus et al. (2006) and others have shown that mothers report stronger effects of WFC on physical health than fathers. However, a recent review shows that published evidence on the health effects of WFC does not report clear results for differences between mothers and fathers (Borgmann, Rattay, & Lampert, 2019).

### 1.3. The role of family policies for work-family conflict

The prevalence of WFC differs between European countries; in Scandinavian countries fewer people report WFC than in southern and eastern European countries (Artazcoz et al., 2013; Hagqvist, Gådin, & Nordenmark, 2017; Lunau, Bambra, Eikemo, van Der Wel, & Dragano, 2014). This may be explained by differences in reconciliation policies, employment rates, and family models. For example, the proportion of dual-earner couples in Europe is increasing, with the exception of a few countries such as Italy, Spain and Greece (Grönlund & Öun, 2010; Hämmig, 2014). At the same time, part-time employment is widespread among women and mothers in some European countries, while in others only a negligible proportion of women work part-time (Eurostat, 2018). Also, gender norms vary in different societies and may be an explanation for differences in WFC. Here, 'gender norms' refers to standards and the expectations that are placed on the roles of women and men within distinct cultural settings (McGinnity & Whelan, 2009).

In the literature, various models are used to analyze the associations between reconciliation policies and WFC: it is common to use comparisons of groups of countries clustered along welfare-state regimes and in some cases individual indicators of reconciliation policies are analyzed (Notten et al., 2017; Stier, Lewin-Epstein, & Braun, 2012).

### 1.4. Reconciliation policies, work-family conflict and health

Studies show that the association between WFC and health may also vary in strength and magnitude depending on the political and cultural contexts in which it is studied (Hagqvist et al., 2017; Pinillos-Franco & Somarriba, 2018). Artazcoz et al. (2013) could not find any negative health effects of WFC for Nordic countries, where dual-earner models and a high level of equality between working mothers and fathers are politically supported. On the other hand, Hagqvist et al. (2017) report that in countries with a high degree of politically and socially supported equality of working mothers and fathers, the association between WFC and poorer health was stronger than in countries that support more traditional family models.

Looking at gender differences in health, it is reported that mothers in countries with more conservative reconciliation policies have poorer SRH due to WFC compared to fathers. On the other hand, this difference is less pronounced in countries where dual-earner strategies are politically supported or where there is little government intervention in the organization of paid work and family roles (Pinillos-Franco & Somarriba, 2018).

### 1.5. Research questions

The state of research provides indications that the prevalence of WFC is associated with reconciliation policies and may be related to public health aspects in Europe. To date, however, a large proportion of studies on the associations between WFC and health have only looked at individual countries or at country groups and welfare-state regimes. Comparisons of distinct reconciliation policy indicators in Europe, especially with regard to health, are still rather rare today (Artazcoz et al., 2013; Hagqvist et al., 2017; Lunau et al., 2014).

Therefore, the aim of this study is to examine the role of WFC in the context of reconciliation policies for public health in the European region. To our knowledge, it is the first analysis of OECD family database policy indicators in the context of health-related consequences of WFC. The following questions guide our research:

- (1) How prevalent is WFC among working mothers and fathers in Europe?
- (2) Is there an association between WFC and SRH among working mothers and fathers in the European region?
- (3) Does the association between WFC and SRH differ between European countries?
- (4) Which indicators of reconciliation policies in European countries are associated with the prevalence of WFC?

## 2. Material and methods

### 2.1. Data

The analyses are based on the sixth wave of the European Working Conditions Survey (EWCS). This survey, carried out in 2015, surveyed 43,850 employed persons aged 15 and over in 35 European countries, including the 28 EU Member States, Albania, the Republic of North Macedonia, Montenegro, Norway, Serbia, Switzerland, and Turkey.

Multi-stage stratified samples were drawn in each country. The target sample size was 1,000 persons, but larger samples were drawn in individual countries depending on the number of persons employed: Poland (1,200), Spain (1,300), Italy (1,400), France (1,500), United Kingdom (1,600), Germany (2,000), and Turkey (2,000). In Belgium, Slovenia and Spain the samples were also increased to 2,500, 1,600, and 3,300 respectively. Personal interviews were conducted in all countries. The average response rate was 42.5%, varying widely

between countries (from 10.9% in Sweden to 78.9% in Albania). Further details on survey methods have been published in the EWCS 2015 technical report (Eurofound, 2016).

For the purposes of this analysis, all employed participants aged 18 and older who were living with at least one child aged under 18 in the household were included ( $n = 10,273$ ). The weighting factors provided by the data holders were used to compensate for design-related differences in selection probability, to align the sociodemographic characteristics (age, gender, region, occupational group and sector) of the participants with the number of employed persons in the countries (post-stratification), and, in the case of pooled estimates, to include the countries proportional to the number of employed persons.

## 2.2. Outcome, predictor and control variables

Health was operationalized with SRH. All participants were asked: "In general, how would you rate your health today? Would you say it is very good, good, moderate, bad or very bad?" The responses were dichotomized into very good/good and moderate/bad/very bad.

WFC was measured with the following items: "How often in the last 12 months have you ... /Since you started your main paid job, how often have you ... (A) kept worrying about work when you were not working, (B) felt too tired after work to do some of the household jobs which needed to be done, (C) found that your job prevented you from giving the time you wanted to your family, (D) found it difficult to concentrate on your job because of your family responsibilities, and (E) found that your family responsibilities prevented you from giving the time you should to your job?" The response options were on a scale of always, most of the time, sometimes, rarely and never which were scored with the values 4 to 0 accordingly. Item (A) was not considered because it does not directly measure a reconciliation conflict between paid work and family. It is suggested that items (B) and (C) refer to "work-to-family conflict" while (D) and (E) refer to "family-to-work conflict". However, the results from a factor analysis (results not shown) suggested that only one factor underlies the four items, so that no differentiation between work-to-family and family-to-work conflict was made in the present analysis.

As no reference for the creation of an index out of the five items specific to the EWCS dataset exist, we formed a sum index from the items (B) to (E), which can assume a minimum of 0 and a maximum of 16 points. Similar sum indices were also calculated from comparable items, for example in the International Social Survey Programme (Breyer & Bluemke, 2016). The index was dichotomized for the analyses, where 8 and more points are interpreted as 'high WFC' and 0 to 7 points as 'low WFC'. The results of a sensitivity analysis show that a differently set cutoff between 9 and 10 points does not produce a significant change of results.

The analyses were controlled for relevant sociodemographic and occupational factors. The sociodemographic control variables are age, education, number of persons in the household, partner status, number of persons in the household beyond the nuclear family (the person interviewed, their children and partners), the age of the youngest child, and the self-defined working time of the partners (full-time or part-time). The following were chosen as factors related to employment and the different structures of the labor markets: sector, occupation, existence of a works council, fixed term of own employment contract, length of stay in current job, shift work, self-assessed working time, and working time autonomy.

In addition to the data from EWCS 2015, the analysis included indicators of countries' reconciliation policies provided by the Organization for Economic Cooperation and Development (OECD). Based on Thévenon (2011), eight indicators were selected from the OECD Family Database (Table 1).

The data from the years 2012–2015 were included as arithmetical averages. Data on the maternal employment rate were not available for Norway. The value was imputed using the Norwegian values of the

other indicators and Norway's mean female employment rate in 2012–2015 in a linear regression. In total, OECD data were available for 23 countries. Information on the countries covered and the values of the indicators for individual countries are presented in Table A (appendix). For the calculation of the multivariable analyses, the values of the indicators were standardized to a mean value of 0 and a standard deviation of 1.

## 2.3. Statistical analyses

In the descriptive analyses, weighted proportions of WFC by gender and working time as well as weighted proportions of SRH stratified by WFC, gender and working time were calculated (research question 1). In addition, multivariable analyses were carried out applying a weighted logistic regression with SRH as the dependent variable and WFC as the independent variable controlled for sociodemographic and occupational factors (research question 2).

A logistic regression model for hierarchical data (multilevel regression) was calculated to consider differences in the association between WFC and SRH between countries. In this way, different levels of the dependent variable between the countries can be controlled for (random intercept model) and the variation of effect size between countries can be examined (random slope model). As a first step, a multilevel model with SRH as a dependent variable and WFC as an independent variable were calculated, in which indicators for reconciliation policies were not included (research question 3). In a second step, multi-level models with WFC as the dependent variable were calculated in order to understand the association between reconciliation policy indicators and WFC (research question 4). Here, three models were calculated: A so called 'empty model', which estimates the between-country variation of WFC (the intercept). A second model contains occupational and sociodemographic control variables and in the third model we added the reconciliation policy indicators as independent variables. The between-country variation of WFC is calculated for each model (Lunau et al., 2014; Merlo, 2006). We also report the percentage of proportional change in variance (PCV) with model 1 as the reference to quantify the change in variance when adding the control variables and reconciliation policy indicators (Larsen & Merlo, 2006). Furthermore, for model 3 the odds ratios and corresponding 95% confidence intervals for the reconciliation policy indicators are presented.

In order to assess multicollinearity between reconciliation policy indicators, variance inflation factors (VIF) were calculated. Although this measure should be interpreted with caution, values  $< 10$  can be considered as an indication of low or non-existent multicollinearity (O'Brien, 2007). In the present calculations, the mean VIF for mothers was 2.47, the maximum 4.95. For fathers, a mean VIF of the reconciliation indicators of 2.65 was calculated; the maximum was 5.38. All statistical analyses were performed with Stata SE (version 15.1).

## 3. Results

### 3.1. Sample

Table 2 gives an overview of the sample of working parents by country. It describes the number of cases, the proportion of moderate to very poor SRH, the mean age, the proportion of respondents with high WFC, the proportion of persons with self-reported part-time employment, and the mean number of children. Mothers and fathers were represented with about 50% each in the countries.

### 3.2. Descriptive and multivariable analyses

The distribution of WFC by gender and working time (Fig. 1) shows that, with regard to the prevalence in total, no significant differences between mothers and fathers exist. However, nearly 24% of mothers in

**Table 1**  
Reconciliation policy indicators, OECD Family Database.

Indicator	Definition	Unit
Gender gap in the employment rate	Gender gap measured as the percentage point difference between the yearly male employment rate and the female employment rate	Percentage
Maternal employment rate	Yearly employment rates for women (aged 15–64) with at least one child aged 0–14	Percentage
Public expenditure on family benefits in cash	Includes child allowances – which are sometimes income-tested and have payment levels that in some countries vary with the age or number of children – public income support payments during periods of parental leave, and, in some countries, income support for single-parent families	Percentage of gross domestic product per year
Public expenditure on family benefits in kind	Includes the direct financing or subsidization of childcare and early childhood education facilities, public childcare support through earmarked payments to parents, public spending on assistance for young people and residential facilities, and public spending on family services, including center-based facilities and home help services for families in need	Percentage of gross domestic product per year
Length of paid maternity/parental leave for mothers	Employment-protected leave of absence for employed women around the time of childbirth or adoption in some countries, plus employment-protected leave of absence for employed parents, which is often supplementary to specific maternity and paternity leave periods, and frequently, but not in all countries, follows the period of maternity leave. Entitlement to the parental leave period is often individual	Weeks
Length of paid paternity/parental leave for fathers	Employment-protected leave of absence for employed fathers at childbirth or in the first few months thereafter, plus employment-protected leave of absence for employed parents, which is often supplementary to specific maternity and paternity leave periods, and frequently, but not in all countries, follows the period of maternity leave. Entitlement to the parental leave period is often individual.	Weeks
Children aged 0–2 in formal childcare/pre-school	Percentage of children aged 0–2 enrolled in or using early childhood education and care services	Percentage
Children aged 3–5 in pre-primary education/primary school	Percentage of children 3–5 enrolled in or using pre-primary education or primary school	Percentage

full-time employment report a high WFC. In contrast, only 18% of fathers in full-time employment report a high WFC. Women in part-time employment also report high WFC significantly less than mothers employed full-time.

Fig. 2 depicts an association between the level of WFC and moderate to very poor SRH. This association is evident in both mothers and fathers and in full- and part-time employment.

To support these results, a multivariable logistic regression analysis was performed with SRH as a dependent variable, confirming this association even when controlled for sociodemographic and occupational factors. The adjusted odds of moderate to (very) poor SRH for mothers with high WFC is 2.5 times higher (95% CI: 1.92–3.34). For fathers, the odds ratio is also 2.5 (95% CI: 1.80–3.37).

### 3.3. Multilevel analyses

In order to investigate whether the association between WFC and SRH differs between the 23 countries, a logistic multilevel model with random slope and random intercept was calculated. This multi-level model did not converge (results not shown here). When forcing the calculation to stop after 30 iterations, a variation between countries close to zero ( $\text{var}(\text{bWFC})$  for mothers and fathers  $< 0.0001$ ) appeared.

In a second step, we analyzed if reconciliation policies were reducing between-country variation and which particular policy indicators are associated with the occurrence of WFC in different countries. Here, the OECD's reconciliation policy indicators were included in the calculations. Logistic multilevel models with WFC as the dependent

**Table 2**  
Sample description of working parents with at least one child in the household, unweighted frequencies and weighted averages and proportions in %, n = 10,273.

Country	n	Proportion of respondents with moderate to (very) poor self-reported health	Mean age of respondents in years	Proportion of mothers with work-family conflicts	Proportion of fathers with work-family conflicts	Proportion of self-reported part-time employees	Mean number of children under 18 in household
Estonia	321	30%	37.4	14%	20%	5%	1.6
Italy	375	25%	41.9	26%	21%	26%	1.5
Portugal	258	23%	39.9	23%	15%	10%	1.3
Slovakia	281	23%	38.6	19%	21%	7%	1.5
Norway	461	21%	39.8	14%	10%	20%	1.9
Luxembourg	462	19%	40.0	22%	12%	29%	1.8
Spain	1,140	19%	41.0	28%	28%	19%	1.6
Belgium	996	18%	39.9	16%	14%	26%	1.8
Poland	362	18%	37.9	22%	25%	14%	1.5
France	691	17%	40.1	24%	13%	20%	1.8
Germany	540	17%	40.0	13%	10%	35%	1.5
Slovenia	631	16%	39.1	11%	13%	8%	1.7
Sweden	344	16%	40.5	21%	19%	13%	1.8
Finland	337	15%	40.3	18%	15%	10%	1.9
United Kingdom	556	15%	39.3	27%	23%	37%	1.7
Denmark	353	14%	41.5	13%	14%	16%	1.8
Austria	323	13%	39.4	18%	22%	40%	1.7
Netherlands	340	13%	40.2	11%	11%	47%	1.9
Hungary	209	10%	39.9	14%	19%	6%	1.6
Czech Republic	294	9%	38.5	14%	21%	6%	1.5
Ireland	409	7%	39.7	21%	16%	32%	1.9
Switzerland	242	6%	41.1	19%	19%	45%	1.6
Greece	348	4%	40.8	31%	33%	13%	1.6
<b>Total</b>	<b>10,273</b>	<b>16%</b>	<b>39.9</b>	<b>19%</b>	<b>18%</b>	<b>21%</b>	<b>1.7</b>

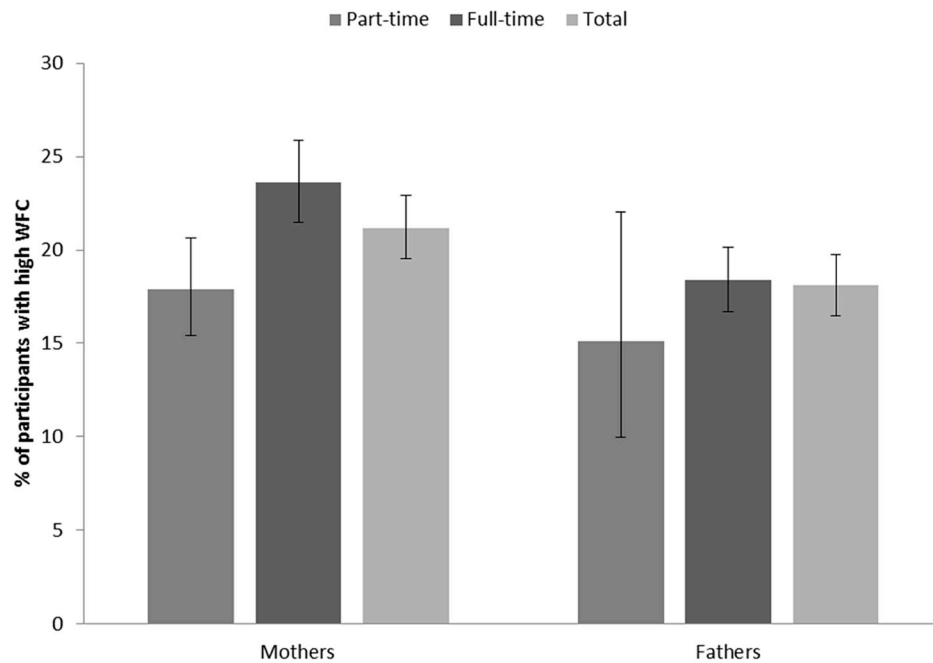


Fig. 1. WFC among working mothers and fathers, stratified by working time, weighted proportion in %, n = 10,257.

variable were calculated. Since the indicators of reconciliation policy are context characteristics at level 2, only a random intercept model could be estimated.

Table 3 shows variation of the prevalence of WFC between countries for mothers and fathers in the empty model (model 1). When introducing occupational and demographic factors (model 2) and reconciliation policy indicators (model 3) into the models, a reduction of between-country variance can be observed. For mothers, occupational and demographic factors reduce the between-country variation by only 5%. However, when adding reconciliation policy indicators the variation is reduced by nearly 93% compared to the empty model. For fathers, occupational and demographic factors explain about 25% of the between-country variation. However, also for this group the introduction of reconciliation policy indicators leads to a major reduction of 77% compared to the empty model.

Table 4 shows the associations between the policy indicators and

WFC adjusted for sociodemographic and occupational factors (model 3).

The results of the regression models suggest that WFC is associated with reconciliation policies among working parents, but to different degrees for mothers and fathers. The labor market integration of mothers has a protective effect on the prevalence of WFC among mothers. The length of paid maternity leave and parental leave for mothers and a high proportion of children under three years of age in formal childcare also have protective effects with regards to WFC. On the other hand, in countries where longer parental leave is granted for fathers, an association with higher WFC among mothers is revealed. The same results are shown for higher public expenditure on family benefits in kind.

For fathers, the results show that the labor market participation of mothers has a protective effect on the occurrence of WFC. The more mothers are integrated into the labor market, the lower the statistical odds that they will have a high WFC.

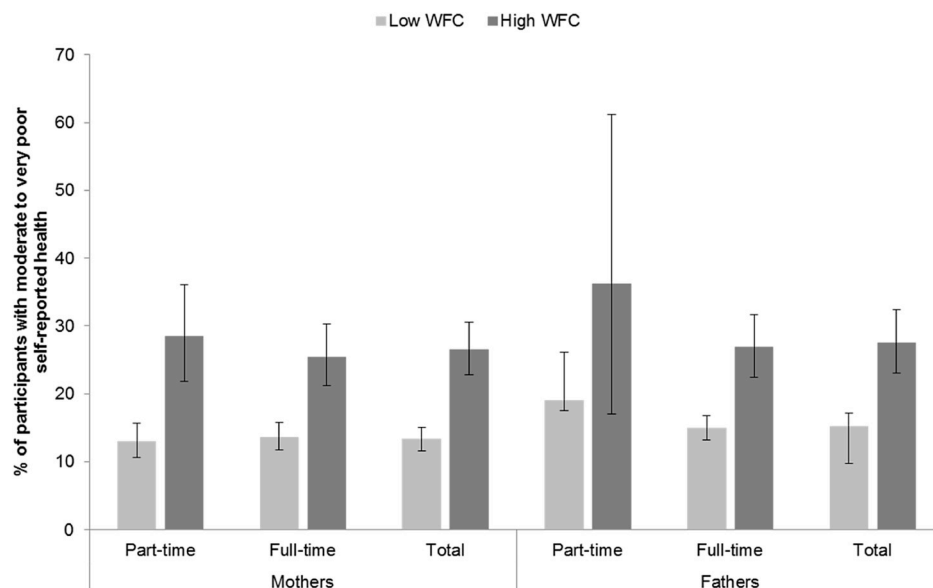


Fig. 2. Prevalence for moderate to (very) poor SRH among working mothers and fathers, stratified by WFC and working time, weighted proportion in %, n = 9,448.



**Table 3**  
Between-country differences of work-family conflict (mothers n = 5,094, fathers n = 4,467).

	Mothers			Fathers		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Model	Empty model	Model 1 + occupational and demographic factors	Model 2 + reconciliation policies	Empty model	Model 1 + occupational and demographic factors	Model 2 + reconciliation policies
Between country variance	0.110	0.105	0.008	0.097	0.072	0.022
PCV	Ref.	4.54%	92.73%	Ref.	25.77%	77.32%

**Table 4**  
Association between policy indicators and WFC (odds ratios and 95% confidence intervals) in model 3.

	Mothers (OR) <sup>a</sup>	Fathers (OR) <sup>a</sup>
n	5,094	4,467
Gender gap in the employment rate	1.03 [0.89–1.21]	0.94 [0.77–1.14]
Maternal employment rate	<b>0.76</b> [0.65–0.89]	<b>0.76</b> [0.63–0.93]
Public expenditure on family benefits in cash	1.00 [0.91–1.09]	0.98 [0.88–1.10]
Public expenditure on family benefits in kind	<b>1.34</b> [1.15–1.56]	1.11 [0.93–1.34]
Length of paid maternity/parental leave for mothers	<b>0.75</b> [0.66–0.86]	0.87 [0.74–1.03]
Length of paid paternity/parental leave for fathers	<b>1.21</b> [1.05–1.38]	1.02 [0.85–1.21]
Children aged 0–2 in formal childcare/pre-school	<b>0.78</b> [0.64–0.95]	0.93 [0.72–1.19]
Children aged 3–5 in pre-primary ed./primary school	0.95 [0.84–1.07]	0.94 [0.82–1.08]

Definitions and units for each indicator are given in [Table 1](#).

bold = significant results (confidence intervals do not include the 1)

<sup>a</sup> Controlled for age, education, number of persons in the household, partner status, number of persons in the household beyond the nuclear family, age of the youngest child, working time of the partners, sector, occupation, existence of a works council, fixed term of own employment contract, length of stay in current job, shift work, working time, working time autonomy.

## 4. Discussion

### 4.1. Work-family conflict in Europe

With regard to research question 1, the results show that full-time working mothers are usually more affected by WFC than fathers. Even within the group of mothers these effects can be observed in the present study: those in part-time employment report significantly less WFC than full-time employed mothers. Hence, the results suggest that different proportions of mothers and fathers reporting high WFC can be observed when the calculations are stratified along weekly working hours. This finding may contribute to the past literature on gender differences of WFC ([Hagqvist et al., 2017](#); [Lunau et al., 2014](#); [Notten et al., 2017](#)). Stratified proportions by working time are strongly recommended when analyzing WFC in mothers and fathers.

### 4.2. Health-related consequences of work-family conflict

There is a clear association between the level of the WFC and SRH among parents and only minor differences between mothers and fathers are revealed (research question 2). This confirms results from other studies, which show that a high WFC is associated with poorer SRH ([Greenhaus et al., 2006](#)). In addition, our results find no differences in the association of WFC and health between mothers and fathers. This supports the growing body of literature reporting no gender differences ([Borgmann, Rattay, & Lampert, 2019](#)).

### 4.3. Differences between countries in the association of work-family conflict and self-reported general health

The multilevel models calculated for research question 3 did not converge. Non-convergence can be induced by a high complexity of the regression model, by too small sample sizes both on level 1 and level 2, or when no sufficient variation in the intercept and slope exist ([Bates, Kliegl, Vasishth, & Baayen, 2015](#); [Moineddin, Matheson, & Glazier, 2007](#)). The authors forced the regression models to stop after 30 iterations and a variation between countries close to zero (var(bWFC) for mothers and fathers < 0.0001) appeared. This finding may suggest that, in our case, non-convergence was induced due to insufficient variation. This confirms the results from the 2010 European Working Conditions Survey by [Lunau et al. \(2014\)](#), who also report no differences in the association of work-life balance and SRH between European country groups. Consecutively, the authors deduce that the association between WFC and SRH differs little between the European countries in terms of direction and strength.

### 4.4. Reconciliation policies and work-family conflict

With regard to research question 4, the present paper reveals different proportion of parents reporting WFC in the 23 countries. Our research shows that reconciliation policies reduce this between-country variance of WFC. However, associations between country-level reconciliation policies and WFC are different for mothers and fathers: While most of the indicators are significantly linked to mothers' WFC, they are generally ineffective in alleviating fathers' WFC. Differences in predictors of WFC may be attributed to a highly gendered distribution of paid and family work. Although traditional gender segregation of

work and family roles start to evade due to the increased labor force participation of women, women still carry the majority of responsibilities in the family sphere. Thus, women experience greater changes from the transition into parenthood, more often adapt their paid working hours to the new demands from family work but are at the same time expected to combine both roles, at least in most Western societies (Crompton & Lyonette, 2006; Korpi, Ferrarini, & Englund, 2013; Notten et al., 2017; Ruppanner, 2013; Shockley, French, & Peter, 2018). On the other hand, a large proportion of men do not report a great impact of parenthood on their division of work and family life (Notten et al., 2017; Stier et al., 2012). This may lead to women being more affected by policies that aim at a better reconciliation of work and family roles.

The present study, furthermore, contributes to an understanding of the association between reconciliation policies and WFC by being the first analysis to add a comprehensive number of individual reconciliation policy indicators from the OECD family database to the models. Previous studies have focused on the comparison of country groups along welfare state regimes or employed single policy measures (Hagqvist et al., 2017; Notten et al., 2017; Ruppanner, 2013). This may involve the risk of missing the heterogeneity of policy objectives within these groups.

#### 4.4.1. Maternity, paternity and parental leave

Our results are in line with previous findings which show an association between paid parental leave for mothers and low WFC. Parental leave arrangements allow mothers to temporarily give up employment and better cope with demands from the family context (Ruppanner, 2013). On the contrary, some studies find only weak associations between parental leave and WFC. The authors of these studies suggest that the effects of national policies vary between subgroups of different employment statuses and education levels in women and men (Allen et al., 2014; Notten et al., 2017; Shockley et al., 2018).

The reported higher levels of WFC among working mothers living in countries with longer available parental leave for fathers might be rooted in effects within the OECD data, where countries with longer parental leave for fathers tend to have shorter parental leave for mothers (see Table A (appendix)). This, in turn may partly be attributed to data collection methods for parental leave: The data only reflects the length of available parental leave instead of the actual parental leave taken. Also, it is not always clear if the maximum or average length of parental leave for parents is reported and if entitlement is limited to specific groups of parents. Against this background, the indicator must be interpreted with caution and should be examined in detail in further research, especially for fathers.

#### 4.4.2. Formal childcare

The association between formal childcare and low WFC for mothers suggests that sufficient availability of formal childcare enables parents to better reconcile paid work and family life. What is striking, however, is that in the present results this only applies to mothers. Stier et al. (2012) argue that this may be a result of an unequal distribution of family work, which is primarily understood as the mothers' task.

Our results, however, stand in contrast to the results from a recent review of the literature, where no significant associations between WFC and formal childcare were found (Shockley et al., 2018). Steiber (2009) suggests that heterogeneous results are rooted in different study designs, conceptualizations and methods of surveying WFC. Also, as aforementioned, childcare policies may have different effects on specific groups of mothers, varying according to employment status, working time as well as family arrangements.

#### 4.4.3. Public expenditure on family benefits

Previous studies on indicators of reconciliation policies did not consider public expenditure on families (Shockley et al., 2018). In this paper, individuals living in countries with high public expenditure on family benefits in kind, such as spending on institutional state-provided

childcare, are reporting higher levels of WFC. Public expenditures of cash benefits for parents are not associated with WFC in mothers and fathers. However, Table A (appendix) reveals the paradox that some countries with a high expenditure on family benefits in kind report rather small proportions of children under the age of three to be in formal childcare. This may suggest that in these countries public expenditure on family benefits in kind may not refer to spending on institutional childcare but consist of support for young people and housing, public expenditure on family services, and specific facilities for families in need (OECD, 2019). Spending of this kind, in turn, may indicate higher proportions of families in low income groups or single parents, who are more susceptible of reporting higher levels of WFC (Bianchi & Milkie, 2010). However, due to the lack of clarity regarding the actual purposes of the spending, comparability between countries is limited. Thus, more precise data collection is needed to improve the suitability of the indicator for further research regarding reconciliation policies.

#### 4.4.4. Maternal employment rate and gender gaps in employment

A high maternal employment rate is associated with a lower WFC for working mothers and fathers. The gender gap in employment rates is not associated with WFC. In some studies, the maternal employment rate is seen as an approximation for a positive attitude towards gender norms as gender-equitable distribution of paid work (Hagqvist et al., 2017). These studies show that individuals report fewer WFC if they live in countries where gender norms support women's employment (Hagqvist et al., 2017). This adds to the hypothesis that WFC is not only shaped by reconciliation policy, but also by gender norms and role stereotypes of women and men (Crompton & Lyonette, 2006; Van der Lippe, Jager, & Kops, 2006).

When interpreting the results presented here it should be borne in mind that policy indicators have different effects on WFC depending on gender, age and number of children, partner status and other social determinants (Pinillos-Franco & Somarriba, 2018; Shockley et al., 2018; Stier et al., 2012). Thus, results show that policy indicators such as formal childcare and longer parental leave have a positive effect especially on men with lower levels of education (Notten et al., 2017). Another study had shown that formal childcare leads to a reduction of time-related WFC only in mothers (Steiber, 2009). Also, considerable differences in the interaction between policies and WFC are found when distinguishing between work-to-family and family-to-work conflicts: it is reported that reconciliation policy indicators primarily affect family-to-work rather than work-to-family conflicts (Gallie & Russell, 2009). This calls for the use of intersectional approaches to consider dimensions of inequality, such as gender and social determinants combined and thus generate new insights into the impact of policy on WFC and health for specific population groups (Korpi et al., 2013).

#### 4.5. Limitations

Because the data used are cross-sectional, no causal conclusions can be drawn on the association between WFC and SRH. Thus, it cannot be ruled out that selection effects may play a role in the association between WFC and health and that poorer health leads to higher WFC, as has already been shown elsewhere (Jensen, 2016; Leineweber et al., 2013; Neto et al., 2016).

It should also be noted that the policy indicators included in the analysis only take into account part of the reconciliation policy strategies and do not include relevant aspects of tax, labor market and family policy. Furthermore, the complexity of the interplay between political intentions and the actual use of reconciliation policy can only be represented by indicators to a limited extent.

In addition to the rather small number of cases per country, the variation in response rates across countries, especially in individual regions, should be taken into account when interpreting the results.

In this paper, a focus has been placed on the association between conflicts in the reconciliation of employment and family roles and

health in order to identify risk factors for public health. However, no consideration has been given to work-family enrichment and work-family balance (Greenhaus & Allen, 2011; Greenhaus & Powell, 2006; McNall, Nicklin, & Masuda, 2010).

It is also possible that another selection effect occurs, as only employed persons with at least one minor child in the household were included in the sample. Some of those who felt burdened by the reconciliation of employment and family roles might have already given up employment and are thus no longer part of the sample considered here (Notten et al., 2017).

The analyses are also focused on heterosexual couples and parents cohabiting with their partners. However, further research should investigate how the dynamics of politics, WFC and health are evident among single parents and same-sex couples.

#### 4.6. Recommendations for future research

The authors believe there is a need for further research on WFC and health in the context of reconciliation policies in individual countries and across timelines. Trend studies could observe how both WFC itself and the association with health evolve over time, also against the background of changing policy measures. However, this is only possible if the instrument for measuring WFC in different surveys allows a comparison between countries and points in time. At the same time, however, it should be borne in mind that variations of existing instruments for measuring WFC reflect other aspects of the existing conflicts that have not been considered up to now and may also be better tailored to diverse study populations.

Case studies may be useful to consider intersectional approaches to identify differences in associations between policies, WFC and health according to gender, social determinants, and individual work arrangements. This might pave the way to more differentiated statements on individual groups and political indicators due to a larger number of cases per country and a small amount of information to be compared (Aisenbrey & Fasang, 2017; Shockley et al., 2018). Studies should also include not only reconciliation policy factors, but also labor policy, working conditions and family-related support by superiors (Allen et al., 2014).

This is particularly important as the precision of available policy indicators is limited. After assessing some of the OECD core indicators for family policies in Europe, the authors suggest to improve data on the actual use of available policies such as parental leave and to reconsider the depth of aggregated indicators such as public spending.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ssmph.2019.100465>.

## Appendix

Table A  
Indicators of reconciliation policy from the OECD Family Database

Country	Proportion of respondents with fair to (very) poor self-reported health	Gender gap in the employment rate	Maternal employment rate (%)	Public expenditures on family benefits in cash (% of GDP)	Public expenditures on family benefits in kind (% of GDP)	Length of paid maternity/parental leave for mothers in weeks	Length of paid paternity/parental leave for fathers in weeks	Children aged 0–2 in formal childcare/pre-school (%)	Children aged 3–5 in pre-primary ed./primary school (%)
Estonia	30%	6,18	64,80	1,60	0,40	166,00	2,00	24,10	89,90
Italy	25%	18,40	54,97	0,75	0,70	47,70	0,15	16,60	94,90
Slovakia	23%	13,48	56,00	1,55	0,50	164,00	0,00	4,50	72,20
Portugal	23%	5,88	74,30	0,75	0,50	30,10	21,30	34,70	89,80
Norway	21%	3,78	81,52	1,20	1,80	88,00	12,00	55,10	96,70
Luxembourg	19%	12,25	73,13	2,80	0,85	42,00	26,40	55,25	86,30
Spain	19%	9,63	58,43	0,50	0,85	16,00	2,10	34,00	96,80
Belgium	18%	8,68	72,20	1,80	1,00	32,30	19,30	59,80	84,60

(continued on next page)

## 5. Conclusion

This paper has contributed to an understanding of the association between WFC and health in Europe as well as the role of reconciliation policy indicators. Relevant policies have been identified to provide starting points to reduce WFC and thus, in part, to improve the health of working parents in Europe.

However, the existing data on reconciliation policy indicators may constrain policy evaluations due to limitations in comparability and depth of available indicators. Resources should be devoted to improve data quality for further investigations into the reliance of the policies for families' health and well-being in Europe.

The article shows that mothers and fathers benefit to varying degrees from political actions regarding WFC. While regulations that support the paid work of women and mothers and give mothers choices about the length and type of care for their children can help reduce WFC, fathers are affected by family policy only to a limited extent. Thus, gender norms like the division of employment and family roles between mothers and fathers and the resulting WFC form an important analytical dimension in the investigation of gender inequalities in health and should be taken into account when discussing work, family and reconciliation policies in Europe.

## Statement ethics approval

The data from the EWCS 2015 survey were retrospective anonymized summary statistics. Therefore, ethical approval was not required.

## Conflicts of interest

None to declare.

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Table A (continued)

Country	Proportion of respondents with fair to (very) poor self-reported health	Gender gap in the employment rate	Maternal employment rate (%)	Public expenditures on family benefits in cash (% of GDP)	Public expenditures on family benefits in kind (% of GDP)	Length of paid maternity/parental leave for mothers in weeks	Length of paid paternity/parental leave for fathers in weeks	Children aged 0–2 in formal childcare/pre-school (%)	Children aged 3–5 in pre-primary ed./primary school (%)
Poland	18%	13,00	66,47	0,70	0,60	45,00	2,00	8,70	80,40
Germany	17%	8,85	69,00	1,10	1,05	58,00	8,70	37,20	96,00
France	17%	7,18	72,07	1,60	1,30	42,00	15,00	51,40	100,00
Sweden	16%	3,53	82,97	1,40	2,15	60,00	10,00	46,40	95,30
Slovenia	16%	7,65	79,87	1,45	0,55	52,10	2,10	37,70	88,00
United Kingdom	15%	9,75	66,30	2,50	1,40	39,00	2,00	34,40	100,00
Finland	15%	2,25	73,60	1,50	1,70	160,50	9,00	27,70	73,90
Denmark	14%	5,60	82,00	1,40	2,25	50,00	2,00	58,50	89,80
Austria	13%	8,78	76,17	1,80	0,70	60,00	8,70	19,00	98,60
Netherlands	13%	9,35	76,33	0,70	0,70	35,50	19,90	55,80	92,80
Hungary	10%	11,35	55,03	1,95	1,10	160,00	1,00	16,10	90,70
Czech Republic	9%	16,08	60,47	1,60	0,60	110,00	0,00	4,50	98,00
Ireland	7%	9,30	58,20	2,50	0,85	26,00	0,00	24,68	74,50
Switzerland	6%	9,85	76,43	1,20	0,40	14,00	0,00	39,37	49,10
Greece	4%	17,53	52,03	1,00	0,30	43,00	0,40	16,93	64,00

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