



Poor-quality employment and health: How a welfare regime typology with a gender lens illuminates a different work-health relationship for men and women

Kaori Fujishiro^{a,*}, Emily Q. Ahonen^b, Megan Winkler^c

^a Division of Field Studies and Engineering, National Institute for Occupational Safety and Health, Cincinnati, OH, USA

^b Department of Social and Behavioral Sciences, Richard M. Fairbanks School of Public Health, Indiana University, Indianapolis, IN, USA

^c Division of Epidemiology and Community Health, School of Public Health, University of Minnesota, Minneapolis, MN, USA

ARTICLE INFO

Keywords:

Occupational health
Employment quality
Welfare regime
Self-rated health
Unpaid labor
Structural sexism

ABSTRACT

In the growing literature on employment quality and health, poor quality of employment is generally associated with poor health. However, this association may not be uniform for men and women if unpaid caregiving labor is taken into consideration. How paid and unpaid labor is performed varies across societies because of differences in both state support for families and labor market penalties for women. Applying a gender lens to a welfare regime typology, we investigated the relationship between poor-quality employment and poor health for men and women. For each of five welfare regime types, we hypothesized if men or women would be more strongly affected by poor-quality employment based on the regime's family support policies and labor practices. Our analysis of 18 countries using the 2015 European and American Working Conditions Surveys data largely supported our hypotheses. In countries that support traditional gender roles with high state expenditure and have labor markets that penalize women, the association between poor-quality employment and health was stronger for men. The association was stronger for women in countries that rely on women to provide unpaid caregiving without substantial state support. In countries with apparently gender-neutral expectations for both paid work and unpaid caregiving work, no difference was found between men and women in the association of poor-quality employment with poor health. We discuss the importance of institutional perspectives to understand work as a gendered experience that impacts health. We suggest more comprehensive welfare regime typologies that recognize women both as caregivers and workers. Expanding the scope of research on work and health to include this integrated view of life could make a stride toward gender health equity.

Work is a major part of life for adults, who have multiple roles in society. The roles and responsibilities people assume across life domains are strongly shaped by social contexts. For example, social expectations related to gender roles, the number of paid work hours required for fringe benefits, prevailing wages, transportation and housing options, and the availability of childcare are likely to influence how people engage in paid work and manage caregiving and other activities. Health implications from features in one domain, such as working for pay or not, cannot be fully understood without considering the social contexts in which the domain is embedded. Despite this interconnectedness, research on work and health has been largely decontextualized. The field of occupational health has focused solely on paid work, viewing it largely as a source of hazardous exposures, and the emphasis has been

on discovering harmful materials or conditions and establishing physiological pathways to diseases (Rosenstock and Landrigan, 1986). While useful in identifying many health hazards, this biomedical approach has neglected social contexts. Hence, the traditional occupational health literature does not have a clear way to understand how work contributes to health inequalities (Fujishiro et al., 2021).

Our objective in this paper is to demonstrate that the work-health relationship and inequalities in the relationship cannot be discussed without considering the society in which they occur. We pursue this objective through a gender lens. Gender is "an institutionalized system of social practices for constituting people as two significantly different categories, men and women, and organizing social relations of inequality on the basis of that difference" (Ridgeway and Correll, 2004,

* Corresponding author. NIOSH/DFSE, MS R-15, 1090 Tusculum Avenue, Cincinnati, OH, 45226, USA.

E-mail address: kfujishiro@cdc.gov (K. Fujishiro).

<https://doi.org/10.1016/j.socscimed.2021.114484>

Received 21 June 2021; Received in revised form 7 October 2021; Accepted 10 October 2021

Available online 12 October 2021

0277-9536/Published by Elsevier Ltd.

p. 510). Gender inequality in power is made manifest in multiple levels of social structure, from institutions of cultural norms and resource distribution at the macro level to interactional patterns of behavior and organizational practices at the meso level, both reinforced by gendered selves, identities and internalized gender ideologies at the micro level (Homan, 2019; Ridgeway and Correll, 2004). This definition is a departure from the common use of the term in the biomedical framework, in which gender is an individual-level categorization that implies social influences on individuals but does not offer an analytical frame (e.g., Norris et al., 2020). Gender as a social system is intertwined with how work is defined and practiced through the gender division of labor (Agenjo-Calderón and Gálvez-Muñoz, 2019; Bedford and Rai, 2010). Society defines what counts as work, who is recognized as a worker, what kind of work is available or assigned to whom, how work is organized and regulated, and which work is valued. These definitions and practices of work ultimately determine whose health is affected by it. Thus, gender inequalities in health offers a useful frame for investigating how work produces (ill-)health in society.

Comparing different societies can identify specific social contexts that influence health and determinants of health (Fujishiro et al., 2021; Rose, 1985). Further, international comparisons help us see how social institutions, such as work and family, could be structured so as to better support health. Using data from the United States, United Kingdom, and 16 countries in the European Union, we examine the relationship between the quality of paid work and health for men and women in the context of family welfare system and labor market practices. This investigation expands the traditional occupational health framework by contextualizing work in society with gender as an analytical frame for understanding the work-health relationship.

1. Paid work as a gendered experience relevant to health

Hegemonic gender hierarchy, or the cultural assumption that men have more power and authority than do women, is pervasive and persistent across multiple levels of social institutions (Ridgeway and Correll, 2004). Embedded in this ubiquitous gender inequality in social structure, or *structural sexism* (Homan, 2019), paid work is clearly gendered. Hegemonic gender hierarchy ascribes characteristics to male and female bodies that shape people's experience of the world in those bodies (Armstrong and Messing, 2014; Budgeon, 2014) at the same time it attaches sex labels to jobs (i.e., which jobs are for which people). Sex stereotypes and jobs' sex labels together determine how power, authority, opportunities, and monetary rewards are allocated in paid workplaces (Reskin and McBrier, 2000). Although women's participation in paid work rapidly grew during the second half of the 20th century (Krause and Sawhill, 2017), occupational segregation persists as a result of structural sexism.

Occupational health research, with its original focus on male-dominated heavy industries (Gochfeld, 2005), has been slow to recognize that the knowledge derived from this stance of men as default workers cannot be simply transferred to women (Messing et al., 2003). Not only does occupational segregation result in different patterns of exposure to occupational hazards (Campos-Serna et al., 2013; Eng et al., 2011), but also the ways in which people navigate life outside the boundaries of paid work—such as division of household labor, time use (Winkler et al., 2020), and socialization to gender ideals—contribute to making paid work a highly gendered experience (Messing et al., 2003). The traditional approach to occupational health typically finds unclear associations between occupational exposure and disease for women (e.g., Backé et al., 2012; Hooftman et al., 2004). The unclear results are attributed to physiological differences between sexes, women's propensity to report symptoms, and women's part-time or intermittent engagement in paid work that make exposure assessment difficult (Backé et al., 2012; Hooftman et al., 2004). Without gender as an analytic frame, these are positioned as inevitable limits to occupational health research.

Considering women as atypical workers who generate unexplainable variance leaves us with incomplete understanding of paid work and health. Instead, by recognizing gender as a social system that shapes men's and women's experiences across life domains, including paid and unpaid work, we can investigate work and health in more comprehensive ways. Seeing working people as members of society (Krieger, 2010), rather than solely as workers, opens an opportunity to fully explore work and its health implications.

2. A welfare regime typology with a gender lens for investigating the Work-Health relationship

An effective way to understand the influence of social contexts is to examine how gender as a system is reified in institutions. Welfare regime typologies, which group countries with similar social systems (e.g., political, economic, legal, religious, historical) (Mazur, 2002), grasp how social institutions as a whole operate and shape individuals' lives (Ollier-Malaterre and Foucreault, 2016). Despite considerable attention from population health researchers, regime types have not been consistently associated with expected population health outcomes (Bambra, 2007b; Brennenstuhl et al., 2012; McCartney et al., 2019). Pointing out that inconsistent associations are particularly noticeable when gender as a social system is not explicitly considered in the analysis (Popham et al., 2013; Sainsbury, 1999), scholars have criticized the assumed gender-neutrality and focus on cash transactions in defining regime typologies (Bambra, 2007a, b). In response to these feminist critiques, attempts have been made to incorporate a gender lens in regime typologies (Borrell et al., 2013).

In this study, we combine three typologies (i.e., De Moortel et al., 2014; Korpi et al., 2013; Siaroff, 1994) to capture how gendered institutions influence the lives of men and women with a specific focus on paid work and unpaid caregiving labor. Focusing on "whether welfare states offer women a real choice in terms of working volitionally versus partaking of social programs" (p. 91), Siaroff characterizes regimes by two dimensions, *female work desirability* and *family welfare orientation*. The former, which we refer to as *labor market penalty for women*, describes how labor market opportunities operate for women and men indicated by ratios of women's to men's wages, numbers of managerial workers, post-secondary degree holders, unemployment rates, and rates of participation in the labor market. When these indicators are near equal for men and women, they show that the labor market's penalty for women is relatively low. Social norms about women's participation in paid work would be similar to those about men's, and these norms would be maintained and reinforced through higher education for women, more equal employment practices (i.e., hiring, wages, and promotions), and a higher proportion of women participating in the labor market. Siaroff's second dimension describes how states support reproductive labor, characterized by the overall family policy expenditures such as public daycare, parental leave, and child allowance to the household as well as types of parental leaves and flexibility in retirement systems. These two dimensions are not entirely independent: The family support policies would influence the labor market penalty for women, while the penalty would influence women's participation in the labor market and demands for state family support. Combining high and low levels of the two dimensions, Siaroff proposed a quadrant typology and asserted that low penalty for women in the labor market combined with high levels of state support for reproductive labor is the only regime type in which women have, in Siaroff's words, "a real choice" to participate in the labor market or not, assuming the ongoing presence of existing gender divisions of labor. In all other combinations of the two dimensions, labor market practices and family welfare systems constrain women's participation in the labor market because they make it unrewarding, leave women unsupported in providing unpaid caregiving, or both.

Siaroff's typology needs refinement because the family welfare orientation aggregates various types of family support, and as a result its

implications for women's participation in the labor market are ambiguous. For example, full-time public daycare would make it possible for both parents to have full-time paid work, but part-time daycare and tax incentives for an economically inactive spouse would make it a reality for the less-earning parent—typically the mother—to leave full-time paid work to provide unpaid caregiving labor (Korpi et al., 2013). Recognizing different functions of family policies, Korpi et al. (2013) identify three models of regimes: *traditional family*, *dual earner-dual carer*, and *market-oriented*. The traditional family model incentivizes the mother to be the homemaker or secondary earner through home care allowance and tax benefits. The dual earner-dual carer model promotes full-time employment for both parents through policies such as full-time daycare and earnings-based parental leave compensation. This model intends to distribute caregiving between parents by making parental leave available to either parent or reserving leave time for fathers. The market-oriented model has minimal state intervention on caregiving labor and makes the market “the principal institution governing individuals’ and families’ access to resources” (Korpi et al., 2013, p. 12). De Moortel et al. (2014) further differentiated the traditional family model by the level of state expenditures. The states in this model are institutionally structured to rely on women for unpaid caregiving labor, but the extent to which the state incentivizes unpaid labor could create different material realities for women and men.

Combining De Moortel and colleagues’ refined family welfare orientation with Siaroff’s labor market penalty for women creates a typology with five welfare regimes (Table 1). More detail about how each of the three typologies were created and how we combined them for our analyses can be found in Appendix A. This combined typology captures how paid work and reproductive labor are institutionally structured to shape and reinforce social norms about women and men. While an improvement from earlier regime typologies that ignored gendered institutions, our typology, like all other typological schemes, captures only a simplification of life experiences. The claim that the dual earner-dual carer model distributes reproductive labor evenly to fathers and mothers, for example, should be scrutinized because men’s involvement in reproductive labor could be stigmatized by prevalent norms (Rudman and Mescher, 2013). Still, regime typologies provide a concise way of describing the social values, norms, and ideals—or social imaginaries (Taylor, 2002)—that underpin social institutions and behaviors. Within this institutional frame, we can consider the consequences of life experiences, particularly those realities that do not conform to prevailing social norms. We will describe each of the five regime types we use in the next section as we predict how the quality of paid work interacts with gender identities in impacting health; that is, who would be hurt more by poor quality of employment.

3. Investigating poor quality of employment and health in a welfare regime typology with a gender lens

Quality of employment, determined by terms and conditions of employment as well as the power relations between the employer and employee (Vanroelen, 2019), has gained increasing attention from health inequality researchers in recent years (Juliá et al., 2017; Kreshpaj et al., 2020). While poorer quality of employment (e.g., insecure, low pay, insufficient hours) generally is associated with poorer health (Peckham et al., 2019; Van Aerden et al., 2016), its potentially different impacts for men and women are not well understood (De Moortel et al., 2014; Van Aerden et al., 2016). Using the welfare regime typology with a gender lens, we hypothesize the following patterns of differences between men and women in the health impact of poor employment quality (Table 1).

Type I. Dual Earner-Dual Carer. In this regime type, labor markets do not penalize women as severely as in other regimes. The state provides support for women’s participation in the labor market and encourages more gender-balanced unpaid caregiving at home. In other words, this regime structures labor market practices and family support policies such that paid work could be a less gendered experience than in other regime types. Then, when the quality of employment is poor, there may be little difference in its negative health impact for women and men.

Type II. Traditional Family with High Support Expenditure. In this regime type, family policies highly promote the traditional gender role of women as a homemaker and/or a secondary earner (Korpi et al., 2013). Accordingly, labor markets penalize women economically and professionally. If women do not have stable, full-time, high-paying employment, it does not contradict role expectations for them. Men, on the other hand, are expected to support the household financially, and family benefits in some countries are provided to fathers as part of employment compensation (Siaroff, 1994). Because keeping good-quality employment conforms to the role expectations for men in this regime, experiencing poor-quality employment would have stronger negative impacts on health for men than for women.

Type III. Traditional Family with Low Support Expenditure. This regime type also assumes the traditional male breadwinner and female homemaker/secondary earner, but these states have low expenditures for supporting this form of family (De Moortel et al., 2014). Women in paid work are acting against role expectations for them, which may indicate especially strong need, economic or psychological (self-actualization), for paid work. If the need for women’s paid work is strong, poor-quality employment may have negative impacts on women. The traditional male breadwinner model expects good-quality employment for men, suggesting both women and men would experience negative health associated with poor-quality employment. Yet, because the traditional

Table 1

Welfare regime typology with a gender lens, countries included, and anticipated differences in the association between poor quality employment and health between men and women.

Characteristic	Welfare Regime Type				
	Type I	Type II	Type III	Type IV	Type V
Family welfare model ^a	Dual earner-dual carer	Traditional family	Traditional family	Market-oriented	Market-oriented
State expenditure on family support ^b	High	High	Low	Low	Low
Labor market penalty for women ^c	Low	High	High	Low	High
Countries	Denmark Finland Norway Sweden	Austria Belgium France Germany the Netherlands	Italy Cyprus Spain Greece Portugal	United Kingdom United States	Ireland Switzerland
Anticipated difference between men and women in the association between poor-quality employment and health	No difference	Men more strongly affected	Women more strongly affected	No difference (reasons differ from Type I)	Women more strongly affected

^a Based on Korpi et al. (2013), captures the type of state family policies.

^b De Moortel et al. (2014), captures the degree of state family policy expenditures.

^c Based on Siaroff (1994)’s female work desirability.

family model relies on women for unpaid caregiving, those women in poor-quality employment may experience work overload that men in the same employment situation may not. Thus, we anticipate poor-quality employment to have stronger negative impacts on health for women.

Type IV. Market-oriented with Low Penalty for Women in the Labor Market. Under this regime, strategies to meet caregiving needs are governed by markets and would vary depending on each household's specific situation such as the number of adults, their relative earning potentials, and the availability of other resources (e.g., unearned income, extended family members for caregiving). If the male breadwinner model fits the household best, poor-quality employment would have stronger negative health impacts on men than on women in the same type of household. However, because the labor market penalty for women is relatively low, women in this regime may be socialized to have similar economic and career aspirations as men and may be expected to participate in the labor market as men do; then, women may also be negatively affected by poor-quality employment because of stifled ambitions or the sense of not living up to social expectations. Further, if the household has only one earner, poor-quality employment would impact health negatively regardless of the earner being a woman or man. Thus, given the potential variability in households' specific situations, we may not see clear differences in the health impact of poor-quality employment for women and men.

Type V. Market-oriented with High Penalty for Women in the Labor Market. This regime type also leaves the household responsible for meeting caregiving needs. Because women are penalized in the labor market, the household may adopt traditional gender division of paid and unpaid labor. Moreover, because states do not support families with caregiving needs, we anticipate the effect of this regime to operate similarly to Type III above. Because women are responsible for unpaid caregiving and women's paid work may be necessary for household needs, they may experience work overload. Therefore, negative health impact of poor-quality of employment may be greater for women than for men.

4. Methods

4.1. Data sources and samples

Data were from the 6th European Working Conditions Survey (EWCS) and the 1st American Working Conditions Survey (AWCS), both conducted in 2015. The EWCS was administered in 35 countries, including the 17 European states we classified by the welfare regime typology with a gender lens. The AWCS was coordinated with the EWCS to allow for comparisons (Maestas et al., 2017). The collected information includes sociodemographic characteristics of workers and their various working conditions. European respondents were selected through multi-stage, stratified random sampling to represent, when weighted, the working population in each of the participating states (Ipsos, 2016). US respondents were part of the American Life Panel (ALP), a cohort of adults (≥ 18 years old) recruited from multiple previously formed probability samples to participate in regular online surveys (Pollard and Baird, 2017). When weighted, the ALP sample was nationally representative. In the 18 nations included in this analysis (i.e., 16 member states of European Union, the United Kingdom, and the United States), all respondents were of unrestricted working age in the resident country: 18 years of age or older in the US; ≥ 16 in Spain, Norway, and UK; and ≥ 15 in all other nations. Because the welfare regime typology we used was configured by policies relevant to family caregiving, we limited our analysis to those who live with at least one person who is not the spouse or partner ($n = 14,641$, 57.6% of the 18-nation sample). We used this information as a proxy for unpaid caregiving needs at home; that is, we assumed that these working people lived in a household that included someone—a child, an elderly parent—who required caregiving.

4.2. Measures

Welfare Regime Type. As described above, we combined the typologies proposed by Siaroff (1994), Korpi et al. (2013), and De Moortel et al. (2014) to capture regime type. The characteristics and countries included in each type are shown in Table 1.

Poor-Quality Employment. We conceptualized poor-quality employment as a job that was inadequate in some way for the worker. In the datasets, we identified three ways in which work could be inadequate: 1) the income from the main job was in the lowest quintile within the country the worker resided in; 2) work hours were less than 35 hours per week, and the worker desired more hours; and 3) the worker was a freelancer, subcontractor, staffing agency employee, or self-employed but not as a business owner or partner of a professional practice. The first two capture a job that is inadequate in meeting material needs and also potentially in meeting career aspirations. The third captures self-employment in certain forms, which we considered to provide inadequate rights, protection, and stability to the worker. If respondents fell in any of the three conditions, we considered them having poor-quality employment. This operationalization aligns with key dimensions commonly studied in the current literature of employment quality (Kreshpaj et al., 2020).

Poor General Health. General health status was asked with a single question, "In general, would you say your health is excellent, very good, good, fair, or poor?" The lowest two response categories were combined to indicate poor general health.

Demographic characteristics. Both the EWCS and the AWCS asked if the respondent was a man or woman. Age was recorded in years and used as a continuous variable.

4.3. Analysis

In order to pool the EWCS and AWCS data, we first adjusted existing sample weights in the AWCS so that the sample was proportional to the US workforce in 2014 (Bureau of Labor Statistics, 2015). The new weights for the AWCS were equivalent to the cross-national raked weights in the EWCS. Sample weights were used in all analyses, which were conducted on SAS version 9.4 (SAS Institute, Cary, NC). For descriptive statistics, we used PROC SURVEYFREQ and PROC SURVEYMEANS. The CLUSTER statement was used throughout to identify country as the primary sampling unit. Missing data were extremely rare in this data set, but those who did not provide information on any of the study variables ($n = 16$, 0.1%) were excluded from the analysis, making the analytic sample of 14,625.

We used PROC SURVEYLOGISTIC to estimate the odds of reporting poor health associated with age (continuum), being a woman, and having poor-quality employment. Because our primary interest was whether the effect of poor-quality employment on health differed for women and men in each of the five regime types, we included an interaction term between being a woman and poor-quality employment. We used the full sample (i.e., all 35 European countries and the United States) in parameter estimates but used the DOMAIN statement to obtain the results for each regime type and also to limit the results for those who lived with at least one person who was not the partner/spouse (i.e., proxy for caregiving needs). The DOMAIN statement incorporated the variability in the size of these subpopulations and thus avoided attenuating the variance.

As a robustness check, we included education in the model because education could be a cause for both poor-quality employment and poor health. We also examined if the presence of the spouse/partner created different patterns in associations between poor-quality employment and health. We were unable to investigate the potential effect modification of spouse/partner because of small sample sizes in some regime types.

5. Results

Table 2 presents the prevalence of poor-quality employment, poor self-reported general health, and average age for men and women in each of the five regime types. Poor-quality employment was more prevalent among women across all regime types, but the difference between women and men was the smallest (9.9 percentage points) in Type I, the dual earner-dual carer model, and greatest (26.4 percentage points) in Type II, the traditional family model with high state expenditure on family support, where men had the lowest prevalence of poor-quality employment. Poor self-reported general health was notably higher in Type IV, the market-oriented model with low penalty for women in the labor market, even though the average age was the lowest among the regime types.

Table 3 shows how age, being a woman, and having poor-quality employment were associated with poor self-reported health in each regime type, along with the interaction effect of being a woman and having poor-quality employment. Negative coefficients indicate lower likelihoods of reporting poor health while positive coefficients indicate higher likelihoods. Women were more likely to report poor health in all regime types except for Type II, traditional family policies with high support expenditure. Poor-quality employment was associated with higher likelihoods of reporting poor health for both women and men in all regime types except for Type V, the market-oriented model with high market penalty for women. Type V had very low rates of reporting poor health (less than 1% for men and 1.5% for women), which may have contributed to the different pattern.

The interaction effect of being a woman in poor-quality employment varied across regime types. In Type I, the dual earner-dual carer model, the interaction was not statistically significant although the coefficient was positive and of similar magnitude as the coefficient for Type V, suggesting possible additional risk for poor health among women. In Type II, countries with the traditional family model with high support expenditure, poor-quality employment for women was associated with a lower likelihood of reporting poor health than for men, which supports our hypothesis. Similarly, we found support for our hypothesis in Type III countries, the traditional family model with low support expenditure and high penalty for women in the labor market. There, women in poor-quality employment had higher likelihoods of reporting poor health than men in the same situation. In Type IV, countries where the market does not severely penalize women in the labor market but also governs how families meet their caregiving needs, the interaction coefficient indicates that women in poor-quality employment had slightly lower likelihoods of reporting poor health than men in poor-quality employment. Finally, in Type V, countries with market orientation but high

penalty for women in the labor market, women in poor-quality employment were more likely to report poor health than men in poor-quality employment, which supported our hypothesis and followed the pattern in Type III.

5.1. Robustness checks

Including education in the models did not change the findings about poor-quality employment and women except for Type III, where the association between poor-quality employment and poor health for women and men were somewhat closer to each other. Controlling for the presence of the partner in the household did not change the patterns of our main results. The full results of these robustness checks are presented in Appendix B.

6. Discussion

To understand the work-health relationship in social contexts, we used a welfare regime typology with a gender lens to examine the association between poor-quality employment and health among men and women. Consistent with previous studies, our data showed that poor-quality employment was associated with poor health for both women and men. Because higher proportions of women experience poor-quality employment, it creates a gender health inequity. In addition, we found that under varying family welfare systems and labor markets that shape women's opportunities differently, poor-quality employment had different and complex associations with the health of men and women.

6.1. Social contexts matter to the work-health relationship

Our overall premise for different associations between poor-quality employment and the health of women and men is that through policies and institutions, societies create different needs and expectations for high-quality employment for men and women. Specific differences we hypothesized in each of the five regime types were mostly supported. In the regime that reinforces traditional gender roles with high policy expenditure (Type II), men-presumed breadwinners—were more affected by poor-quality employment than women, who were expected to be secondary earners or to perform exclusively unpaid labor. In two regimes that relied on women to provide unpaid caregiving without substantial state support (Type III and V), women were more affected by poor-quality employment than men. Even though their family support policies were based on different cultural orientations—the traditional family model for Type III, the free market model for Type V—both have low levels of state support for families. Women in poor quality of

Table 2
Characteristics of working men and women with caregiving needs^a by welfare regime type.^b

Characteristics	Type I: Dual earner-dual carer, low market penalty for women (n ^c = 1984)		Type II: Traditional family with high support expenditure, high market penalty for women (n = 4725)		Type III: Traditional family with low support expenditure, high market penalty for women (n = 4875)		Type IV: Market-oriented, low market penalty for women (n = 1992)		Type V: Market-oriented, high market penalty for women (n = 1049)	
	Men (n = 976)	Women (n = 1008)	Men (n = 2191)	Women (n = 2534)	Men (n = 2402)	Women (n = 2473)	Men (n = 893)	Women (n = 1099)	Men (n = 549)	Women (n = 500)
Poor-quality employment, % (95%CI)	16.1 (14.6–17.6)	26.0 (22.0–30.1)	12.2 (9.3–15.0)	38.6 (29.6–47.5)	22.9 (21.8–24.0)	37.5 (33.8–41.1)	22.3 (21.8–22.9)	40.0 (39.0–40.9)	17.2 (9.9–24.6)	36.3 (33.7–39.0)
Self-rated health, Poor/fair, % (95%CI)	1.2 (0.7–1.8)	2.8 (1.8–3.7)	1.8 (1.1–2.4)	2.1 (1.3–3.0)	1.3 (0.9–1.6)	3.7 (2.9–4.6)	8.2 (3.2–13.1)	10.1 (4.9–15.4)	0.9 (0.8–1.0)	1.5 (1.2–1.8)
Age, mean (95% CI)	41.5 (41.0–41.9)	41.3 (39.5–43.0)	41.1 (40.5–41.8)	40.8 (39.7–41.8)	42.8 (41.8–43.7)	42.7 (41.1–44.3)	39.7 (39.4–39.9)	39.8 (39.6–39.9)	41.7 (41.0–42.3)	40.2 (40.1–40.3)

Notes.

^a Workers who live with at least one person who is not the spouse or partner.

^b All statistics were calculated with sample weights that accounted for the relative size of the workforce in each of the countries.

^c All sample sizes are unweighted.

Table 3

Associations with poor self-reported health among workers with caregiving needs by welfare regime type.

Variable	Type I: Dual earner-dual carer, low market penalty for women			Type II: Traditional family with high support expenditure, high market penalty for women			Type III: Traditional family with low support expenditure, high market penalty for women			Type IV: Market-oriented, low market penalty for women			Type V: Market-oriented, high market penalty for women		
	b	SE	p	b	SE	p	b	SE	p	b	SE	p	b	SE	p
Intercept	−3.82	0.12	<.0001	−3.80	0.07	<.0001	−4.03	0.10	<.0001	−2.22	0.30	<.0001	−4.51	0.20	<.0001
Age (mean-centered)	0.00	0.00	0.679	0.07	0.01	<.0001	0.07	0.00	<.0001	0.01	0.00	<.0001	0.01	0.01	0.487
Women (vs. men)	0.37	0.12	0.007	−0.10	0.12	0.413	0.60	0.09	<.0001	0.08	0.01	<.0001	0.37	0.06	<.0001
Poor-quality employment	0.57	0.17	0.003	0.39	0.06	<.0001	0.13	0.05	0.010	0.14	0.03	<.0001	−0.02	0.32	0.944
Women*poor-quality employment	0.22	0.31	0.482	−0.24	0.13	0.083	0.16	0.09	0.084	−0.05	0.02	0.003	0.24	0.09	0.019

Notes. Logistic regression parameter estimates calculated with sample weights to account for the relative size of the workforce in each country. Standard errors were clustered by country. All regime types and caregiving needs (i.e., whether or not living with at least one person who is not the spouse or partner) were included in the same model with the DOMAIN statement that account for the subsample variability.

employment are likely to experience work overload from both paid and unpaid work. These findings suggest that employment quality is a gendered determinant of health and therefore cannot be understood without considering gender as a social system.

Although our hypotheses were mostly supported, specific mechanisms are difficult to know without other crucial information about each household, such as actual needs for caregiving, division of other unpaid labor, and availability of resources, financial or otherwise. These factors may make leaving the labor market a viable, or the only, possibility when competing demands are high. In fact, some US studies suggested that for women, participation in the labor market is a function of number of children in the household (Johnson et al., 2017), and that the pattern of labor market participation throughout adulthood could influence women's health when caregiving needs also existed (Ahonen et al., 2020). Because our sample was limited to those who were in the paid workforce, we were not able to incorporate the full range of situations surrounding paid work, caregiving needs, and health.

While individual circumstances would further explain the mechanisms of gender health inequalities under different regime types, it is still important to understand the work-health relationship from an institutional perspective because many individual circumstances are shaped by social institutions. Institutions, such as work and family, are not only gendered but also influenced by racism, classism, and many other ways in which power is distributed unequally. These institutions then shape individuals' lives along these axes of power, and one consequence is health inequity. In order to understand social determinants of health and health inequity, the research field needs to expand from its current heavy focus on individuals' social identities to multiple, multi-level institutional forces that together create unequal life opportunities (Choo and Ferree, 2010; Homan, 2019).

Comparing welfare regime types is a way to approach the work-health relationship institutionally. Several studies have used welfare regime typologies to examine men's and women's health associated with specific aspects of work—such as long work hours (Artazcoz et al., 2016), part-time work (Bartoll et al., 2014), informal employment (Rodriguez-Loureiro et al., 2020), and various indicators of employment quality (De Moortel et al., 2014). They generally found different work-health associations across regime types, but patterns of gender differentials across regime types were not as clear as in our analysis. Although these studies were concerned about gendered impacts of work characteristics, the regime typologies they used may not have adequately captured gendered social institutions. These studies differ from ours in many ways, but here we focus on the ways in which gender as a social system is used in the composition of regime typologies.

6.2. More comprehensive regime typologies as a tool to examine work and health

To characterize welfare regime types relevant to women's economic

opportunities, Korpi et al. (2013) focused on policies for supporting parents (e.g., child allowances, public daycare, and paid parental leave). Using this typology, Artazcoz et al. (2016) did not find clear patterns of differences between men's and women's health associated with paid work hours across regime types. De Moortel et al. (2014) refined the Korpi typology by including the level of state expenditure on family policies but the patterns across regime types were still unclear. While it is a reality that family welfare has implications for women's paid work, defining regime typologies by family (i.e., child-parent) policies alone creates two problems.

First, recognizing women solely as caregivers ignores how labor markets penalize women, which is a major factor that influences women's paid work experiences. Siaroff (1994) incorporated labor market penalty for women in his typology as an equally important dimension as states' support for parents. Incorporating this dimension to the De Moortel typology, we distinguished two types in the market-oriented model—low penalty for women in the labor market (Type IV) and high penalty (Type V)—and hypothesized that Type V would have similar results to Type III, the traditional family model with low support expenditure and high penalty for women. Type III and Type V indeed demonstrated the same pattern of interaction (i.e., poor quality of employment was more harmful to men than to women) while the two market-oriented regimes (Type IV and V) showed different patterns from each other. We also found that gender identities and poor-quality employment interacted in opposite directions in the traditional family regimes (Type II and Type III) with different levels of support distinguished by De Moortel et al. (2014). Together, these findings indicate that gender as an analytic frame has contributed to the continuing refinement of regime typologies and clarified that employment quality is a gendered health determinant.

A second problem of defining welfare regime types based solely on family policies is that it limits the concept of unpaid labor. Framing issues of work and the gender system as mothers needing to balance paid labor and unpaid childcare needs reduces unpaid labor to biological procreation and neglects a broader concept of social reproduction, which refers to biological reproduction and sexual, emotional, and affective services required in order to maintain family and intimate relationships; unpaid production of goods and services in the home and community; and reproduction of ideology and culture which stabilizes or challenges social relations (Bedford and Rai, 2010). Society as a whole needs this labor because it is necessary for the survival and well-being of all its members, regardless of gender identity or the presence of dependent children at home. Although social reproduction was not directly addressed, the investigation of structural sexism by Patricia Homan (2019) revealed that in societies characterized by greater gender inequalities in power and resources distribution at the macro level, the health of both women and men are harmed. It is not hard to assume that such societies would devalue the social reproduction labor that women so often provide. Women's health may suffer from

unvalued unpaid work (Jung & O'Brien, 2019); also, the quality of social reproduction might deteriorate when that work is not valued, and as a result the health of all members of society might suffer. Therefore, neglecting social reproduction in the research of work and health leaves out a potentially major determinant of population health. In addition to family and labor policies, Borrell et al. (2013) identify three other types of policies related to gender equality: policies to promote equal incomes, equitable use of time, and political representation. Together they recognize women not only as caregivers and workers but also equal participants in civic life. Characterizing welfare state types with all these policies would provide more comprehensive tools to investigate the quality of employment and health in gendered social institutions with the goal of achieving gender health equality and better population health.

7. Limitations and future directions

Our findings assert the importance of revising occupational health research to include women as both paid workers and providers of unpaid labor. However, Siaroff's labor market penalty for women, developed based on data from the 1980s, needs to be updated. Several recent studies (Beckfield et al., 2018; Morris et al., 2019) examined specific labor market policies (e.g., direct job creation, job training, employment incentives) for their effects on men's and women's health. Evaluating a single type of policy at a time, they found mixed results. Combinations of these labor policies may better capture institutional aspects of work relevant to health in a gendered milieu. We also discussed above the limitation of our data being collected only from adults in paid work; thus, we did not capture the full range of situations related to paid and unpaid work. In addition, because the regime typology we used relied on family support policies, we were obligated to limit our analysis to those who live with someone who we presumed needed care. More comprehensive regime typologies might offer the possibility of examining the gender health inequalities of all adults, regardless of their participation in the labor market or the presence of caregiving demands.

In this study we did not address intersectionality, or different experiences of work and gender roles created by other social demarcations. Power and opportunities are distributed differentially not only along gender fault lines but also along lines of race/ethnicity, social class, nativity, ability/disability, and other more subtle categorizations. At various points of intersection, inequality multiplies through institutions at different levels (Choo and Ferree, 2010), but the current study is not well suited for addressing these complexities. In each of the 18 countries in which data were collected, intersecting systems of power salient to health might be different, and social institutions that shape the experience of intersecting identities would also be different. Intersectionality is an important perspective to add to the investigation of work and health in social contexts. Future research with more detailed data, contextual information, and rigorous theorizing is needed.

Other shortcomings, although not uncommon in this type of study, include the heteronormative view of family in our hypotheses and the coarse operationalization of gender identities (Budgeon, 2014). Families and gender identities that fall outside of these views would have even more complex relationships with existing social institutions; however, the current data did not allow us to explore them. Our measure of poor-quality employment also needs further consideration. Because specific methods of measuring employment quality are still being debated (Bodin et al., 2020), we followed the broad consensus in the current literature provided by Kreshpaj et al. (2020). Finally, even though self-reported health is a well-established general health measure, in this sample of adults in paid employment, the prevalence of poor health was generally low. Because the literature on poor-quality employment and health is still relatively new, we opted for the most general indicator of health. Using more prevalent health concerns might show clearer patterns across different regimes; however, it would require more specific hypotheses.

8. Conclusions

Welfare regimes, through their institutional structures, frame what is possible for individuals and how people accomplish their goals. In any type of welfare regime, gender—both as socially constructed roles for men and women as well as their relations to each other reflecting power distribution—underlies the formation and function of institutions. These institutions in turn sustain a gender system over time (Kunitz, 2015; Sainsbury, 1999). Work and family are social determinants of health. While economic independence is important (Bambra, 2007a; Korpi et al., 2013), feminist scholars have cautioned against narrowly focusing on women's participation in the labor market as a means to achieving gender equality (Borchorst and Siim, 2002; Pfau-Effinger, 2017). Instead, they propose “a radical change in the organization of working life” (Borchorst and Siim, 2002, p. 96) so that various domains of life, currently seen as competing for women's time and effort, would be integrated and valued as a full civic life for both men and women (Borchorst and Siim, 2002). Expanding the scope of research on work and health to include this integrated view of life could make a stride toward gender health equity.

Acknowledgements

The authors thank the two anonymous reviewers for their helpful feedback on the earlier version of this paper. The work of EQA on MW on this paper was supported by the National Institute for Occupational Safety and Health (20IPA2014075 for EQA, 20IPA2014074 for MW). The findings and conclusions in this manuscript are those of the authors and do not necessarily reflect the official position of the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC).

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.socscimed.2021.114484>.

Author contributions

KF conceptualized the paper, developed hypotheses, conducted the analysis, interpreted results, and drafted and revised the manuscript. EQA informed and refined the conceptualization, contributed to the interpretation of data and manuscript drafting, and critically reviewed and revised the manuscript. MW contributed to the conceptualization; refined analysis planning, data interpretation, and data presentation; and critically reviewed and revised the manuscript.

References

- Agénjo-Calderón, A., Gálvez-Muñoz, L., 2019. Feminist economics: theoretical and political dimensions. *Am. J. Econ. Sociol.* 78, 137–166.
- Ahonen, E.Q., Fujishiro, K., Brown, S., Wang, Y., Palumbo, A.J., Michael, Y.L., 2020. Gendered Exposures: Exploring the Role of Paid and Unpaid Work throughout Life in US Women's Cardiovascular Health. *Critical Public Health*, pp. 1–11.
- Armstrong, P., Messing, K., 2014. Taking gender into account in occupational health research: continuing tensions. *Pol. Pract. Health Saf.* 12, 3–16.
- Artazcoz, L., Cortés, I., Benavides, F.G., Escrivà-Agüir, V., Bartoll, X., Vargas, H., et al., 2016. Long working hours and health in Europe: gender and welfare state differences in a context of economic crisis. *Health Place* 40, 161–168.
- Backé, E.M., Seidler, A., Latza, U., Rossnagel, K., Schumann, B., 2012. The role of psychosocial stress at work for the development of cardiovascular diseases: a systematic review. *Int. Arch. Occup. Environ. Health* 85, 67–79.
- Bambra, C., 2007a. Defamilisation and welfare state regimes: a cluster analysis. *Int. J. Soc. Welfare* 16, 326–338.
- Bambra, C., 2007b. Going beyond *The three worlds of welfare capitalism*: regime theory and public health research. *J. Epidemiol. Community* 61, 1098–1102.
- Bartoll, X., Cortés, I., Artazcoz, L., 2014. Full-and part-time work: gender and welfare-type differences in European working conditions, job satisfaction, health status, and psychosocial issues. *Scand. J. Work. Environ. Health* 370–379.

- Beckfield, J., Morris, K.A., Bambra, C., 2018. How social policy contributes to the distribution of population health: the case of gender health equity. *Scand. J. Publ. Health* 46, 6–17.
- Bedford, K., Rai, S.M., 2010. Feminists theorize international political economy. *Signs: J. Women Cult. Soc.* 36, 1–18.
- Bodin, T., Çağlayan, Ç., Garde, A.H., Gnesi, M., Jonsson, J., Kiran, S., et al., 2020. Precarious employment in occupational health—an OMEGA-NET working group position paper. *Scandinavian J. Work Environ. Health*. 2020 46 (3), 321–329.
- Borchorst, A., Siim, B., 2002. The women-friendly welfare states revisited. *Nora Nordic J. Women's Stud.* 10, 90–98.
- Borrell, C., Palència, L., Muntaner, C., Urquía, M., Malmusi, D., O'Campo, P., 2013. Influence of macrosocial policies on women's health and gender inequalities in health. *Epidemiol. Rev.* 36, 31–48.
- Brennenstuhl, S., Quesnel-Valleé, A., McDonough, P., 2012. Welfare regimes, population health and health inequalities: a research synthesis. *J. Epidemiol. Community Health* 66, 397–409.
- Budgeon, S., 2014. The dynamics of gender hegemony: femininities, masculinities and social change. *Sociology* 48, 317–334.
- Bureau of Labor Statistics, 2015. Labor Force Statistics from the Current Population Survey. US Department of Labor.
- Campos-Serna, J., Ronda-Pérez, E., Artazcoz, L., Moen, B.E., Benavides, F.G., 2013. Gender inequalities in occupational health related to the unequal distribution of working and employment conditions: a systematic review. *Int. J. Equity Health* 12, 57.
- Choo, H.Y., Ferree, M.M., 2010. Practicing intersectionality in sociological research: a critical analysis of inclusions, interactions, and institutions in the study of inequalities. *Socio. Theor.* 28, 129–149.
- De Moortel, D., Vandenheede, H., Vanroelen, C., 2014. Contemporary employment arrangements and mental well-being in men and women across Europe: a cross-sectional study. *Int. J. Equity Health* 13, 90.
- Eng, A., T Mannetje, A., McLean, D., Ellison-Loschmann, L., Cheng, S., Pearce, N., 2011. Gender differences in occupational exposure patterns. *Occup. Environ. Med.* 68, 888–894.
- Fujishiro, K., Ahonen, E.Q., de Porras, D.G.R., Chen, I.-C., Benavides, F.G., 2021. Sociopolitical values and social institutions: studying work and health equity through the lens of political economy. *SSM-Population Health* 14, 100787.
- Gochfeld, M., 2005. Chronologic history of occupational medicine. *J. Occup. Environ. Med.* 47, 96–114.
- Homan, P., 2019. Structural sexism and health in the United States: a new perspective on health inequality nad the gender system. *Am. Socio. Rev.* 84, 486–516.
- Hooftman, W.E., v P M N, M., van der Beek, A.J., Bongers, P.M., v M, W., 2004. Gender differences in the relations between work-related physical and psychosocial risk factors and musculoskeletal complaints. *Scand. J. Work. Environ. Health* 30, 261–278.
- Ipsos, 2016. 6th European Working Conditions Survey—Technical Report Eurofound.
- Johnson, C.Y., Rocheleau, C.M., Lawson, C.C., Grajewski, B., Howards, P.P., 2017. Factors affecting workforce participation and healthy worker biases in U.S. women and men. *Ann. Epidemiol.* 27, 558–562 e552.
- Juliá, M., Vanroelen, C., Bosmans, K., Van Aerden, K., Benach, J., 2017. Precarious employment and quality of employment in relation to health and well-being in Europe. *Int. J. Health Serv.* 47, 389–409.
- Jung, A.-K., O'Brien, K.M., 2019. The profound influence of unpaid work on women's lives: an overview and future directions. *J. Career Dev.* 46, 184–200.
- Korpi, W., Ferrarini, T., Englund, S., 2013. Women's opportunities under different family policy constellations: gender, class, and inequality tradeoffs in western countries re-examined. *Soc. Pol.* 20, 1–40.
- Krause, E., Sawhill, I., 2017. What We Know and Don't Know about Declining Labor Force participationL A Review. Center on Children and Families, Brookings Institution, Washington, DC.
- Kreshpaj, B., Orellana, C., Burström, B., Davis, L., Hemmingsson, T., Johansson, G., et al., 2020. What is precarious employment? A systematic review of definitions and operationalizations from quantitative and qualitative studies. *Scand. J. Work. Environ. Health*.
- Krieger, N., 2010. Workers are people too: societal aspects of occupational health disparities—an ecosocial perspective. *Am. J. Ind. Med.* 53, 104–115.
- Kunitz, S.J., 2015. *Regional Cultures and Mortality in America*. Cambridge University Press.
- Maestas, N., Mullen, K.J., Powell, D., von Wachter, T., Wenger, J.B., 2017. *The American Working Conditions Survey Data: Codebook and Data Description*. RAND Corporation, Santa Monica, CA.
- Mazur, A.G., 2002. *Theorizing Feminist Policy*. Oxford University Press.
- McCartney, G., Hearty, W., Arnot, J., Popham, F., Cumbers, A., McMaster, R., 2019. Impact of political economy on population health: a systematic review of reviews. *Am. J. Publ. Health* 109, E1–E12.
- Messing, K., Punnett, L., Bond, M., Alexanderson, K., Pyle, J., Zahm, S., et al., 2003. Be the fairest of them all: challenges and recommendations for the treatment of gender in occupational health research. *Am. J. Ind. Med.* 43, 618–629.
- Morris, K.A., Beckfield, J., Bambra, C., 2019. Who benefits from social investment? The gendered effects of family and employment policies on cardiovascular disease in Europe. *J. Epidemiol. Community Health* 73, 206–213.
- Norris, C.M., Yip, C.Y., Nerenberg, K.A., Clavel, M.A., Pacheco, C., Foulds, H.J., et al., 2020. State of the science in women's cardiovascular disease: a Canadian perspective on the influence of sex and gender. *J. Am. Heart Assoc.* 9, e015634.
- Ollier-Malaterre, A., Foucreault, A., 2016. Cross-national work-life research: cultural and structural impacts for individuals and organizations. *J. Manag.* 43, 111–136.
- Peckham, T., Fujishiro, K., Hajat, A., Flaherty, B.P., Seixas, N., 2019. Evaluating employment quality as a determinant of health in a changing labor market. RSF: Russell Sage Found. *J. Soc. Sci.* 5, 258–281.
- Pfau-Effinger, B., 2017. *Development of Culture, Welfare States and Women's Employment in Europe*. Routledge.
- Pollard, M., Baird, M.D., 2017. *The RAND American Life Panel: Technical Description*. RAND Labor and Population, Santa Monica, CA.
- Popham, F., Dikken, C., Bambra, C., 2013. Are health inequalities really not the smallest in the Nordic welfare states? A comparison of mortality inequality in 37 countries. *J. Epidemiol. Community Health* 67, 412–418.
- Reskin, B.F., McBrier, D.B., 2000. Why not ascription? Organizations' employment of male and female managers. *Am. Socio. Rev.* 210–233.
- Ridgeway, C.L., Correll, S.J., 2004. Unpacking the gender system: a theoretical perspective on gender beliefs and social relations. *Gend. Soc.* 18, 510–531.
- Rodriguez-Loureiro, L., Vives, A., Martínez Franzoni, J., Lopez-Ruiz, M., 2020. Health inequalities related to informal employment: gender and welfare state variations in the Central American region. *Crit. Publ. Health* 30, 306–318.
- Rose, G., 1985. Sick individuals and sick populations. *Int. J. Epidemiol.* 14, 32–38.
- Rosenstock, L., Landrigan, P.J., 1986. Occupational health: the intersection between clinical medicine and public health. *Annu. Rev. Publ. Health* 7, 337–356.
- Rudman, L.A., Mescher, K., 2013. Penalizing men who request a family leave: is flexibility stigma a femininity stigma. *J. Soc. Issues* 69, 322–340.
- Sainsbury, D., 1999. *Gender and Welfare State Regimes*. Oxford University Press.
- Siaroff, A., 1994. Work, welfare and gender equality: a new tpology. In: Sainsbury, D. (Ed.), *Gendering Welfare States*. Sage, Thousand Oaks, CA, pp. 82–100.
- Taylor, C., 2002. Modern social imaginaries. *Publ. Cult.* 14, 91–124.
- Van Aerden, K., Puig-Barrachina, V., Bosmans, K., Vanroelen, C., 2016. How does employment quality relate to health and job satisfaction in Europe? A typological approach. *Soc. Sci. Med.* 158, 132–140.
- Vanroelen, C., 2019. Employment quality: an overlooked determinant of workers' health and well-being? *Ann. Work Expo. Health* 63, 619–623.
- Winkler, M.R., Telke, S., Ahonen, E.Q., Crane, M.M., Mason, S.M., Neumark-Sztainer, D., 2020. Constrained choices: combined influences of work, social circumstances, and social location on time-dependent health behaviors. *SSM-Population Health* 11, 100562.