Why have Gains in US Women's Longevity Lagged Behind Europe?: A Comparison of the US and Finland.

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ABSTRACT

Recent gains in women's life expectancy within the United States (US) have lagged behind many high-income European countries. We hypothesize that the resulting life expectancy gap partly reflects post-WWII changes in work-family life within the context of weak social protection policies (e.g., family leave) in the US. For instance, work-family conflict (incompatible demands of combining fulltime employment and childrearing) is higher in the US than other high-income countries; and work-family conflict can damage health. We test our hypothesis by comparing the US to Finland, which has generous social policies to support families, children, and employed parents. We harmonize data on US women from the National Longitudinal Mortality Study with data on Finnish women from national registers, covering 1987-2001. We examine the extent to which country-level differences in the distribution of work-family combinations, and in the mortality consequences of work-family combinations, explain the longevity gap. The findings have important policy implications.

BACKGROUND

Gains in women's life expectancy within the United States (US) have not kept pace with many high-income European countries over the last several decades. For example, life expectancy at birth among US women increased 2.6 years (from 77.9 to 80.5) between 1980-1985 and 2005-2010 compared with a 4.4 year increase in Finland (from 78.3 to 82.8).[1]

We hypothesize that the resulting gap in life expectancy partly reflects post-WWII changes in work-family life within the context of relatively weak social protection policies (e.g., family leave) in the US. During this period, US women's labor force participation rates rose sharply, first marriages were postponed, divorce rates increased, the proportion of non-marital births rose, single mother households became more common, and geographic mobility increased, while total fertility rates changed little.[2-6] Thus, many U.S. women were confronted with higher demands from combining employment and childrearing with lower levels of both informal (e.g., spouse) and formal support (e.g., family support policies). Furthermore, employment policies for working mothers have historically been weaker in the US compared with many European countries.[7] For example, the US ranks 20th out of 21 high-income countries in terms of the number of weeks available for protected parental job leave, and it is one of few OECD countries that does not ensure paid parental leave.[8]

Although work and family roles are usually associated with positive health outcomes,[9] the context within which these roles are performed may modify their health consequences. For instance, combining full-time work and childrearing may be most salubrious within a national policy context that supports employed parents and/or when informal supports (e.g., spouse) are available. In contrast, combining these roles may be less salubrious or even harmful within a context lacking supportive policies and informal supports. Indeed, role overload (insufficient time to fulfill work and family responsibilities) and role interference (incompatibility between work and family responsibilities) may damage health.[10] Work-family role conflict is especially acute in the US. Among women in seven high-income countries, the percentage of employed women who desired more time with their families ranged from 90% in the US to 52% in the Netherlands.[11] However, no studies have examined the extent to which work-family conflict in the post-WWII era has contributed to the current gap in life expectancy between the US and other high-income countries.

Finland provides a unique counterfactual to the US for several reasons. Female full-time employment in Finland increased rapidly since the 1960's and reached a higher level than the US, a difference that has been maintained over the last few decades. For example, in 1960, 66% of women aged 15-64 in Finland were in the labor force as opposed to 42% in the US. By 1980, 70% of Finnish women of this age were in the labor force as opposed to 59% in the US.[12] Although the potential for work-family conflict has thus grown in both countries, the potential may have been realized exclusively, or most acutely, in the US for several reasons. The US has maintained higher fertility rates than Finland. In addition, the US differs dramatically from Finland in its response to these demographic changes. It lags behind Finland in social support policies to help families, children, and employed parents cope with the growing pressures of work and family.[13] The Finnish model for reconciling work and family stands out from any other OECD country because of its tradition of support for employed parents with young children.[11,13] In Finland, two-parent families can expect to receive 32 weeks of full-time paid leave, while the US Federal policy requires no paid parental leave and only a small percentage (roughly 7%) of US firms offer some form of family-related paid leave. Since the Children's Daycare Act enacted in 1973, Finnish policy has facilitated full-time employment among women by providing families with young children guaranteed access to subsidized childcare, covering both pre-school services and out-of-school-hours care up to age seven.[11,13] These benefits are universally available in Finland, unlike the US where, when available, they are often restricted to low-income families. In addition, work-family support in Finland encompasses a wider range of policies in housing, education and employment than in the US.[13]

In this study, we take a first step toward understanding US women's lagging life expectancy by examining how work and family roles—employment, marriage, motherhood—and their combinations predict mortality risk in the US and Finland in recent decades. We replicate the analysis by education level because we speculate that socioeconomically-disadvantaged women in the US garner fewer health-related benefits (or may even suffer health detriments) from certain work-family roles, such as single parenthood, than women in Finland due to weaker social protection policies in the US. In other words, the longevity gap between the US and Finland may be disproportionately driven by certain education levels.[14] We address three major aims:

(1) Compare the prevalence of work-family combinations and their association with mortality risk among women in Finland and the US.

(2) Examine the extent to which US women's mortality disadvantage can be explained by differences with Finland in the prevalence of, and in the mortality consequences of, work-family combinations.

(3) Examine whether the contribution of work-family conflict to mortality differences between the US and Finland differs for women from different socioeconomic status as measured by educational level.

DATA & METHODS

Data

The Finnish data is based on individual-level registers produced by Statistics Finland. Using personal identification numbers, longitudinal population census and labor market data were combined with data on mortality and causes of death. The study data include a representative 11% sample of the Finnish population during 1987–2007 with an 80% over-sample of the population that died during the period. Sampling weights were used in the analyses to account for the unequal sampling probability. Non-linkage of death records to census records is less than 0.5%. Socio-demographic characteristics of respondents—age, education, labor force status, and family characteristics—come from census records or other register data.

The US data come from the 1979-1998 National Longitudinal Mortality Study[15] which was created by linking adults from multiple waves of the Current Population Survey (CPS) to death records in the National Death Index (NDI). The CPS is a monthly survey of roughly 57,000 households that collects demographic and socioeconomic information from a nationally representative sample of the civilian non-institutionalized population. The NDI is a computerized database of all certified deaths in the US since 1979. We use the most recent version of the NLMS which links adult respondents from a 1980 census subsample and 23 waves of the CPS starting March 1979 and ending March 1998 to death records in the NDI through December 31, 2001. It contains roughly 3 million records and over 250,000 deaths.

Sample

Our study covers the period 1987-2001, which are the years common to the US and Finnish data. We include women 30-64 years of age at the time of survey in the US and of census in Finland. This age range

helps ensure most women had completed their post-secondary education. It also reflects the ages at which women are most likely to be in the labor force and/or raising children.

For the US data, we exclude Hispanic respondents to minimize the likelihood that respondents were born outside the country and obtained education abroad. For similar reasons we focus on Finnish born residents. We also exclude the 1980 US census subsample because it does not contain data on educational attainment, and US survey years 1997 and 1998 because we monitor each woman's vital status for five years following her survey and the NLMS stops monitoring vital status at the end of 2001. We follow respondents for five years to limit the window of potential change in work-family roles.

Work-Family Roles

Work and family roles reflect the time of survey (US) or census/registration (Finland). Employment status is categorized as full-time (35 or more hours per week); part-time; not employed due to poor health; or not employed but not due to poor health. Marital status is categorized as married; divorced or separated; widowed; or never married. The number of children under 18 years of age in the household is categorized as 0; 1; or 2 and higher. When examining work-family combinations we dichotomize the three roles into married versus unmarried, employed full-time versus all others, and no children in the household versus all others. This provides eight work-family role combinations.

Mortality

We follow respondents for five years after survey or census to monitor vital status. Each respondent is assigned a 0 or 1 to indicate whether they died during follow-up and they are assigned an exposure window which reflects the length of time between the survey/census and either death or the end of follow-up.

Methods

We estimate all-cause mortality risk using Poisson regression models. We first estimate the association between work-family combinations and mortality risk for each country separately. We assess whether the roles differentially predict mortality between countries by testing for significant differences in the regression coefficients. We then replicate the analysis by education level. Next, we use a pseudo-simulation approach to estimate what the mortality risk of US women would have been had they experienced Finnish

women's: (a) distribution of employment, marital status, and children combinations, and (b) mortality risks associated with employment, marital status, and children combinations.

RESULTS

The results are forthcoming. We provide table shells on pages 6-9.

Table 1. Prevalence of Work and Family Roles among Women 30-64 Years of Age in Finland and the US, 1987-2001

	Finland				United States			
		Education Level				Education Level		
	All	0-11	12	13+	All	0-11	12	13+
Employment								
Full-time	x	x	x	x	x	x	x	x
Part-time	x	x	x	x	x	x	x	x
Not employed	x	x	x	x	x	x	x	x
Not employed due to health	x	x	x	x	x	x	x	x
Marriage								
Married	x	x	x	x	x	x	x	x
Divorced or separated	x	x	x	x	x	x	x	x
Widowed	x	x	x	x	x	x	x	x
Never married	x	x	x	x	x	x	x	x
Children Under 18 in Home								
0	x	x	x	x	x	x	x	x
1	x	x	x	x	x	x	x	x
2 or more	x	x	x	x	x	x	x	x
Work-Family Combinations[1]								
Employed								
Married with 0 children	x	x	x	x	x	x	x	x
Married with 1+ children	x	x	x	x	x	x	x	x
Unmarried with 0 children	x	x	x	x	x	x	x	x
Unmarried with 1+ children	x	x	x	x	x	x	x	x
Not Employed								
Married with 0 children	x	x	x	x	x	x	x	x
Married with 1+ children	x	x	x	x	x	x	x	x
Unmarried with 0 children	x	x	x	x	x	x	x	x
Unmarried with 1+ children	x	x	x	x	x	x	x	x
N	x	x	x	x	x	x	x	x

[1] Unmarried includes divorced, separated, widowed, and never married. Employed includes full-time.

Table 2. Poisson Regression Coefficients Predicting Women's Risk of Death from Work-Family Roles, 1987-2001

	Finland						United States					
Age	x	x	x	x	x	x	x	x	x	x	x	x
Race/ethnicity	x	x	x	x	x	x	x	x	x	x	x	x
Educational attainment	x	x	x	x	x	x	x	x	x	x	x	x
Employment (full-time)[1]												
Part-time	x			x	x		x			x	x	
Not employed	x			x	x		x			x	x	
Not employed due to health	x			x	x		x			x	x	
Marriage (married)												
Divorced or separated		x		x	x			x		x	x	
Widowed		x		x	x			x		x	x	
Never married		x		x	x			x		x	x	
Children Under 18 in Home (2+)												
0			x		x				x		x	
1			x		x				x		x	
Work-Family Combinations[2]												
(Employed, married, 0 children)												
Employed, married, 1+ children						x						x
Employed, unmarried, 0 children						x						x
Employed, unmarried, 1+ children						x						x
Not employed, married, 0 children												
Not employed, married, 1+ children						x						x
Not employed, married, 0 children						x						x
Not employed, unmarried, 1+ children						x						x
Not employed, unmarried, 0 children						x						x

[1] Reference groups in parentheses.

[2] Unmarried includes divorced, separated, widowed, and never married. Employed includes full-time.

Table 3. Poison Regression Coefficients Predicting Women's Risk of Death from Work-Family Roles by Education Level, 1987-2001[1]

	Finland						United States					
0-11 Years of Education												
Employment (full-time)[2]												
Part-time	x			x	x		x			x	x	
Not employed	x			x	x		x			x	x	
Not employed due to health	x			x	x		x			x	x	
Marriage (married)												
Divorced or separated		x		x	x			x		x	x	
Widowed		x		x	x			x		x	x	
Never married		x		x	x			x		x	x	
Children Under 18 in Home (2+)												
0			x		x				x		x	
1			x		x				x		x	
(Employed, married, 0 children)[3]												
Employed, married, 1+ children						x						x
Employed, unmarried, 0 children						x						x
Employed, unmarried, 1+ children						x						x
Not employed, married, 0 children												
Not employed, married, 1+ children						x						x
Not employed, married, 0 children						x						x
Not employed, unmarried, 1+ children						x						x
Not employed, unmarried, 0 children						x						x
12 Years of Education												
Employment (full-time)												
Part-time	x			x	x		x			x	x	
Not employed	x			x	x		x			x	x	
Not employed due to health	x			x	x		x			x	x	
Marriage (married)												
Divorced or separated		x		x	x			x		x	x	
Widowed		x		x	x			x		x	x	
Never married		x		x	x			x		x	x	
Children Under 18 in Home (2+)												
0			x		x				x		x	
1			x		x				x		x	
(Employed, married, 0 children)												
Employed, married, 1+ children						x						x
Employed, unmarried, 0 children						x						x
Employed, unmarried, 1+ children						x						x
Not employed, married, 0 children												
Not employed, married, 1+ children						x						x
Not employed, married, 0 children						x						x
Not employed, unmarried, 1+ children						x						x
Not employed, unmarried, 0 children						x						x
13 or More Years of Education												
Employment (full-time)	x			x	x		x			x	x	
Part-time	x			x	x		x			x	x	
Not employed	x			x	x		x			x	x	
Not employed due to health												
Marriage (married)		x		x	x			x		x	x	
Divorced or separated		x		x	x			x		x	x	
Widowed		x		x	x			x		x	x	
Never married												
Children Under 18 in Home (2+)			x		x				x		x	
0			x		x				x		x	
1												
(Employed, married, 0 children)						x						x
Employed, married, 1+ children						x						x
Employed, unmarried, 0 children						x						x
Employed, unmarried, 1+ children												
Not employed, married, 0 children						x						x
Not employed, married, 1+ children						x						x
Not employed, married, 0 children						x						x
Not employed, unmarried, 1+ children						x						x
Not employed, unmarried, 0 children												

[1] All models control for age and race/ethnicity.

[2] Reference groups in parentheses.

[3] Unmarried includes divorced, separated, widowed, and never married. Employed includes full-time.

Table 4. The Contribution of Work-Family Context to the Mortality Gap between Women in Finland and the United States

		United States		
		Scenario A	Scenario B	Scenario C
	Finland	Status-quo	If the distribution of work-family roles was same as Finland	If the mortality risks associated with work-family roles were the same as Finland
All women	x	x	x	x
Education level				
0-11 years	x	x	x	x
12 years	x	x	x	x
13+ years	x	x	x	x

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