Extended abstract

Partnership, Parenthood, Employment and Mental Health in Young Adulthood: Results from Longitudinal Finnish Registry Data.

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Introduction

Individuals living with a partner, who have children in the family and who are employed generally engage in healthier behaviors, enjoy better health, and have lower mortality than individuals without a partner, without children in the family and without employment, respectively.[1–4] However, these different dimensions of work-family life, i.e. partnership, parenthood and employment, may share similar pathways through which they potentially influence health. For example, an individual who is not employed may lack financial security, but some of this insecurity may be compensated by having a partner who is employed. Similarly, the social support one might lack because of the absence of a partner may be compensated by social contacts at work if employed.

    Several studies have looked into whether combining employment, marriage and parenthood is associated with health, mainly focusing on mortality or measures of physical health.[5–7] Two distinctive theories have been put forward on how combining multiple roles may influence an individual's health. First, the *role accumulation hypothesis* states that having multiple roles benefits women's health as being employed provides additional social support and gives more financial independence to women.[6,7] On the other hand, the *multiple role hypothesis* postulates that combining employment, marriage and parenthood may be detrimental for women's health due to the presence of competing demands and the stress that may result from that.[6–9] Much of this research has focused on women as they are most likely to feel these competing demands; they take up most of the core housework, spend more time with the children, and women's labor force activity has increased considerably in recent decades.[10,11] However, as men have increased their time doing core housework tasks more recently, these competing demands may also play an important role for men's health.[11]

    In this study, we examine whether partnership, parenthood and employment among Finnish young men and women interact in their influence on mental health, using longitudinal registration data linked to medication registries. We estimate both ordinary least squares models and individual fixed effects models, that account for all time-invariant individual characteristics.

Data and methods

An 11% random sample representative of the population permanently residing in Finland at the end of any of the years 1995 to 2007 was used. Using a unique personal identification code, this sample was then linked on an individual level to data from other official registries; namely the labor market data file and medication records. The medication records contained all purchases of any prescribed medication with information on purchase dates and the amount and type of drug purchased. The sample was restricted to men and women aged 25 to 39 years in 1995.

    We focused on the prescription of psychotropic medication in general, including antidepressants (Anatomical Therapeutic Chemical (ATC) code: N06A), antipsychotics (ATC code: N05A), antimanic agents (ATC codes: N05AX12, N05AH5, N03AF01, N05AN01, N05AH03, N03AG01, N05AE04), and anxiolytic/sedative/hypnotic (ASH) medication (ATC codes: N05B, N05C). For now, we considered purchased psychotropic medication as a binary variable; it takes the value 1 if the individual had purchased at least one prescription of psychotropic medication in a calendar year, and it takes the value 0 if none of these medications were purchased.

Individuals were defined as being in a partnership when they were either married or cohabiting and living with their partner. Individuals not in a partnership included those not living with another adult, those living with at least one adult other than a partner (e.g., a sibling or friend) and those with an unknown living arrangement status. Parenthood status was based on whether an individual had at least one child under the age of 18 years in the family. Employment was defined as being employed, whereas not being employed comprised of those unemployed, students and pupils, pensioners and others (including other, unknown, conscripts and conscientious objectors). As age may be non-linearly related with psychotropic medication purchases, we included 5-year age dummies in our analysis to allow for this non-linearity. Purchases of psychotropic medication may have changed over time, and to account for this time trend year dummies were also included in our analysis. Four categories of educational attainment, based on the highest degree obtained by the individual, were distinguished: only compulsory education, upper secondary or less education, lower tertiary education, and higher tertiary or more education. All variables were annually measured and included as time-varying variables in our analysis.

First, we analyzed the relationship between partnership, parenthood, employment status and purchases of psychotropic medication in separate models and in one model together. Second, we combined the binary measures of partnership, parenthood and employment status in eight work-family combinations and analyzed the relationship between these combinations and purchases of psychotropic medication. Third, we estimated the associations of two of the variables with psychotropic medication purchases stratified by the third. For example, we estimated the association of parenthood and employment for those partnered and not partnered separately. We used ordinary least squares models and additionally applied individual fixed effects models to control for unobserved time-invariant confounders. In all models, we controlled for age, year and education. All analyses were done separately for men and women.

Preliminary results

In 1995, most men in our sample were partnered (63.1%, Table 1) and employed (71.8%) but did not have any children in the family (53.0%). Most women were partnered (71.9%), had children in the family (65.3%) and were employed (66.0%). Overall, 5.4 percent of men and 7.0 percent of women purchased at least one prescription of psychotropic medication in 1995. The prevalence of psychotropic medication purchases among not partnered men (8.2%) and women (10.5%) was larger than among partnered men (3.7%) and women (5.6%). Similar results were found for parenthood and employment; the prevalence was larger among men (6.9%) and women (8.8%) without children in the family than with children in the family (3.6% of men and 6.0% of women), and it was larger among those without employment (10.5% of men and 9.6% of women) than those with employment (3.4% of men and 5.6% of women). In 2007, we observe the same patterns, although men and women were generally more likely to purchase psychotropic medication; 12.8% of men and 18.2% of women. This increase is largely due to aging of our study sample. For both 1995 and 2007, women were more likely to have purchased prescribed psychotropic medication than men overall, but also within partnership, parenthood, and employment categories, as well as in each work-family combination.

Results from the first ordinary least squares (OLS) model indicated that men and women who were not partnered, did not have any children in the family, and were not employed were more likely to have purchased psychotropic medication than those with a partner (8.3 percentage points difference (% diff) for men; % diff: 8.1 for women, Table 2), with children in the family (% diff: 6.8 for men; % diff: 6.2 for women), and with employment (% diff: 15.6 for men; % diff: 10.5 for women), respectively. When partnership, parenthood and employment were combined in one model, the effect sizes of all variables were attenuated. This may indicate that these work-family dimensions share some of the same pathways. Further looking at how work-family combinations are related to purchases of psychotropic medication shows that all other combinations than men and women with a partner, with children in the family and with employment are more likely to purchase psychotropic medication. For example, men and women who are not partnered, have no children in the family and are not employed are most likely to have purchased psychotropic medication; 21.9 percentage points difference for men and 26.1 percentage points difference for women compared to those partnered, with children in the family and with employment. When controlling for time-invariant factors in the individual fixed effects models, we find similar patterns, but with strongly attenuated effect sizes. These overall smaller effect sizes in the FE models indicate that a substantial part, but not all, of these associations can be explained by selection.

The stratified analyses show differential associations of two dimensions given the third one (Table 3). For example, men and women being partnered and not being employed are more likely to purchase psychotropic medication when they do not have any children in the family (% diff: 11.1, 95% CI: 10.0, 12.1 for men; % diff: 15.8, 95% CI: 14.5, 17.0 for women) than when they have children in the family (% diff: 7.4, 95% CI: 6.8, 8.1 for men; % diff: 4.0, 95% CI: 3.6, 4.5 for women). The estimates were attenuated when we controlled for time-invariant confounding in the FE model. For example, not having a partner and no children was worse for unemployed men

(% diff: 1.9, 95% CI: 1.3, 2.5) than for employed men (% diff: 0.9, 95% CI: 0.7, 1.1) in terms of their psychotropic medication purchases. Similarly, partnered women without employment were worse off when they did not have any children (% diff: 1.4, 95% CI: 0.9, 1.9) than those who did have children in the family (% diff: 0.3, 95% CI: 0.1, 0.6).

Preliminary conclusions

Descriptive results and the ordinary least squares model indicated that men and women who do not have a partner, no children in the family and who are not employed are more likely to purchase psychotropic medication. These differences became smaller in the individual fixed effects models, indicating that selection explains some but not all of this association.

Next steps

The models will be further developed and optimized, e.g. a three way interaction will be estimated, and we also analyze interactions on both the additive (e.g. using the Relative Excess Risk due to Interaction [RERI]) and the multiplicative scales. We will also assess whether the relationship between the work-family combinations and psychotropic medication purchases differs for different types of medications. Therefore, results for the four subcategories of psychotropic medication will also be studied.

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Tables

Table 1. Distribution of partnership, parenthood, employment, and psychotropic medication for men and women in 1995 and in 2007																
	Men								Women							
	1995				2007				1995				2007			
	Distribution, No. (%)		Purchased psychotropic medication, No. (%)		Distribution, No. (%)		Purchased psychotropic medication, No. (%)		Distribution, No. (%)		Purchased psychotropic medication, No. (%)		Distribution, No. (%)		Purchased psychotropic medication, No. (%)	
No. of individuals	60277		3237	(5.4)	60277		7726	(12.8)	59371		4124	(7.0)	59371		10828	(18.2)
Partnership																
Partnered	38028	(63.1)	1417	(3.7)	40746	(67.6)	3800	(9.3)	42685	(71.9)	2370	(5.6)	42120	(70.9)	6301	(15.0)
Not partnered	22249	(36.9)	1820	(8.2)	19531	(32.4)	3926	(20.1)	16686	(28.1)	1754	(10.5)	17251	(29.1)	4527	(26.2)
Parenthood																
1+ child < 18 years in the family	28360	(47.1)	1031	(3.6)	30532	(50.7)	2607	(8.5)	38773	(65.3)	2311	(6.0)	35365	(59.6)	5334	(15.1)
No children < 18 years in the family	31917	(53.0)	2206	(6.9)	29745	(49.4)	5119	(17.2)	20598	(34.7)	1813	(8.8)	24006	(40.4)	5494	(22.9)
Employment																
Employed	43283	(71.8)	1454	(3.4)	49690	(82.4)	4480	(9.0)	39208	(66.0)	2195	(5.6)	49060	(82.6)	7387	(15.1)
Not employed	16994	(28.2)	1783	(10.5)	10587	(17.6)	3249	(30.7)	20163	(34.0)	1929	(9.6)	10311	(17.4)	3441	(33.4)

Table 1. Distribution of partnership, parenthood, employment, and psychotropic medication for men and women in 1995 and in 2007 – CONTINUED

Work-family combinations																
Partnered / 1+ child / employed	22362	(37.1)	684	(3.1)	27225	(45.2)	2048	(7.5)	21775	(36.7)	1051	(4.8)	24880	(41.9)	3091	(12.4)
Partnered / 1+ child / not employed	5029	(8.3)	295	(5.9)	2180	(3.6)	417	(19.1)	11284	(19.0)	700	(6.2)	3690	(6.2)	738	(20.0)
Partnered / no children / employed	7971	(13.2)	241	(3.0)	9766	(16.2)	955	(9.8)	7209	(12.1)	356	(4.9)	11533	(19.4)	1747	(15.2)
Partnered / no children / not employed	2666	(4.4)	197	(7.4)	1575	(2.6)	380	(24.1)	2417	(4.1)	263	(10.9)	2017	(3.4)	725	(35.9)
Not partnered / 1+ child / employed	607	(1.0)	19	(3.1)	944	(1.6)	90	(9.5)	3324	(5.6)	288	(8.7)	5361	(9.0)	1042	(19.4)
Not partnered / 1+ child / not employed	362	(0.6)	33	(9.1)	183	(0.3)	52	(28.4)	2390	(4.0)	272	(11.4)	1434	(2.4)	463	(32.3)
Not partnered / no children / employed	12343	(20.5)	510	(4.1)	11755	(19.5)	1387	(11.8)	6900	(11.6)	500	(7.3)	7286	(12.3)	1507	(20.7)
Not partnered / no children / not employed	8937	(14.8)	1258	(14.1)	6649	(11.0)	2397	(36.1)	4072	(6.9)	694	(17.0)	3170	(5.3)	1515	(47.8)

Note. For descriptive purposes, this table includes men and women aged 25 to 39 years in 1995 and who had data available for both 1995 and 2007.

Table 2. Psychotropic medication by partnership, parenthood and employment for men and women aged 25-39 years in 1995 followed up to 2007

	Men (No. of obs.: 737573)		Women (No. of obs.: 720267)	
	OLS	OLS with FE	OLS	OLS with FE
Separate models				
Not partnered versus partnered	8.30 (7.93, 8.67)	1.09 (0.92, 1.25)	8.07 (7.65, 8.50)	1.10 (0.89, 1.30)
Having no children versus having 1 or more children	6.81 (6.50, 7.12)	0.93 (0.77, 1.09)	6.20 (5.79, 6.62)	0.14 (-0.08, 0.35)
Not employed versus employed	15.64 (15.12, 16.17)	1.55 (1.38, 1.73)	10.53 (10.06, 11.00)	0.73 (0.55, 0.90)
All in one model				
Not partnered versus partnered	3.83 (3.44, 4.22)	0.76 (0.57, 0.95)	5.74 (5.33, 6.15)	1.10 (0.90, 1.31)
Having no children versus having 1 or more children	1.80 (1.48, 2.12)	0.56 (0.37, 0.74)	3.99 (3.58, 4.40)	0.02 (-0.20, 0.23)
Not employed versus employed	13.87 (13.37, 14.37)	1.51 (1.34, 1.69)	9.77 (9.32, 10.22)	0.73 (0.56, 0.91)
Work-family combinations				
Partnered / 1+ child / employed	ref.	ref.	ref.	ref.
Partnered / 1+ child / not employed	7.54 (6.91, 8.16)	1.20 (0.94, 1.46)	4.16 (3.72, 4.59)	0.44 (0.22, 0.66)
Partnered / no children / employed	1.33 (1.02, 1.64)	0.58 (0.38, 0.78)	1.37 (0.95, 1.78)	-0.30 (-0.55, -0.05)
Partnered / no children / not employed	12.40 (11.35, 13.45)	1.33 (0.96, 1.70)	17.25 (15.98, 18.52)	1.43 (1.00, 1.87)
Not partnered / 1+ child / employed	1.56 (0.73, 2.39)	0.16 (-0.34, 0.65)	4.56 (4.05, 5.07)	0.90 (0.61, 1.18)
Not partnered / 1+ child / not employed	13.28 (10.77, 15.80)	2.10 (1.20, 3.00)	12.85 (11.83, 13.88)	1.65 (1.24, 2.07)
Not partnered / no children / employed	3.21 (2.90, 3.52)	1.12 (0.92, 1.33)	5.20 (4.67, 5.72)	1.08 (0.77, 1.40)
Not partnered / no children / not employed	21.87 (21.11, 22.63)	3.17 (2.90, 3.45)	26.12 (24.92, 27.33)	2.14 (1.71, 2.57)

Note. Coefficients from the OLS and OLS with FE models were multiplied by 100 to present percent changes in having purchased psychotropic medication. All models were controlled for 5-year age dummies, year dummies, and educational attainment. Ref.: reference category. 95% confidence intervals in brackets.

Table 3. Stratified analysis of psychotropic medication by partnership, parenthood and employment for men and women aged 25-39 years in 1995 followed up to 2007

	Men (No. of obs.: 737573)		Women (No. of obs.: 720267)	
	OLS	OLS with FE	OLS	OLS with FE
By partnership status, partnered				
1+ child and employed	ref.	ref.	ref.	ref.
1+ child and not employed	7.51 (6.88, 8.13)	1.14 (0.89, 1.38)	4.03 (3.60, 4.47)	0.28 (0.07, 0.50)
No children and employed	1.28 (0.97, 1.59)	0.50 (0.30, 0.71)	1.48 (1.06, 1.89)	-0.35 (-0.61, -0.09)
No children and not employed	12.38 (11.32, 13.43)	1.29 (0.91, 1.68)	17.42 (16.15, 18.70)	1.37 (0.91, 1.82)
Not partnered				
1+ child and employed	ref.	ref.	ref.	ref.
1+ child and not employed	11.77 (9.23, 14.31)	0.36 (-0.93, 1.65)	8.36 (7.31, 9.40)	0.71 (0.18, 1.25)
No children and employed	1.86 (0.99, 2.73)	0.00 (-0.85, 0.86)	1.07 (0.38, 1.76)	-0.10 (-0.67, 0.48)
No children and not employed	20.32 (19.20, 21.44)	1.86 (0.97, 2.74)	21.58 (20.29, 22.86)	1.02 (0.34, 1.70)
By parenthood status, at least one child < 18 years in the family				
Partnered and employed	ref.	ref.	ref.	ref.
Partnered and not employed	7.44 (6.82, 8.07)	0.98 (0.73, 1.23)	4.04 (3.60, 4.48)	0.34 (0.12, 0.56)
Not partnered and employed	1.67 (0.84, 2.50)	-0.15 (-0.64, 0.35)	4.65 (4.14, 5.17)	1.04 (0.74, 1.34)
Not partnered and not employed	13.26 (10.74, 15.79)	2.48 (1.54, 3.42)	12.91 (11.88, 13.93)	1.64 (1.20, 2.07)
No children < 18 years in the family				
Partnered and employed	ref.	ref.	ref.	ref.
Partnered and not employed	11.07 (10.03, 12.11)	0.39 (-0.05, 0.83)	15.78 (14.52, 17.04)	1.43 (0.92, 1.94)
Not partnered and employed	1.87 (1.49, 2.25)	0.62 (0.32, 0.91)	3.87 (3.29, 4.45)	1.16 (0.76, 1.55)
Not partnered and not employed	20.45 (19.66, 21.24)	2.52 (2.15, 2.88)	24.58 (23.35, 25.80)	2.14 (1.61, 2.67)
By employment status, employed				
Partnered and 1+ child	ref.	ref.	ref.	ref.
Partnered and no children	1.27 (0.96, 1.58)	0.55 (0.36, 0.73)	1.52 (1.11, 1.93)	-0.25 (-0.51, 0.01)
Not partnered and 1+ child	1.74 (0.91, 2.57)	0.01 (-0.45, 0.48)	4.79 (4.28, 5.30)	0.85 (0.55, 1.15)
Not partnered and no children	3.15 (2.84, 3.46)	0.89 (0.69, 1.09)	5.09 (4.57, 5.61)	0.95 (0.61, 1.29)
Not employed				
Partnered and 1+ child	ref.	ref.	ref.	ref.
Partnered and no children	4.65 (3.48, 5.83)	-0.20 (-0.94, 0.55)	11.37 (10.05, 12.68)	0.28 (-0.41, 0.97)
Not partnered and 1+ child	5.23 (2.69, 7.77)	1.45 (-0.04, 2.94)	7.62 (6.57, 8.68)	1.04 (0.42, 1.65)
Not partnered and no children	13.74 (12.80, 14.69)	1.89 (1.25, 2.53)	20.82 (19.57, 22.07)	1.12 (0.41, 1.83)

Note. Coefficients from the OLS and OLS with FE models were multiplied by 100 to present percent changes in having purchased psychotropic medication. All models were controlled for 5-year age dummies, year dummies, and educational attainment. Ref.: reference category. 95% confidence intervals in brackets.