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ORIGINAL ARTICLE

Sociodemographic and health status predictors of parental role strain: A general population study

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Abstract

Aims: Numerous studies indicate that stressors associated with parenthood can adversely affect parental well-being and children's psychosocial development. The aim of the study was to analyze sociodemographic differences in parental role strain in the general parental population. *Methods*: The study is based on a national postal survey of a random sample of 605 Icelandic mothers and fathers of children under 18. *Results*: Parental role strain was related to young parental age at first birth, female gender, non-married status, age of youngest child, age range of children, number of children in the household, and the parent's own chronic illness. Furthermore, chronic illness or disability of a child was markedly related to higher parental role strain, although the relationship was partly reduced with parental employment. ***Conclusions*: Parental role strain is unevenly distributed in the parental population and varies by sociodemographic and health statuses of parents and children. Understanding and addressing parental role strain could improve parental mental health and help create a family environment that enhances the psychosocial development of children.**

Keywords: *Parents, role strain, stress, chronic illness, gender, family size, family structure, work*

Introduction

Despite the benefits and joys that parenthood may bring, studies of parents with dependent children tend to show that they experience more psychological distress than other adults [1–3]. These findings are usually interpreted to mean that parents experience more ongoing difficulties in their lives than other adults or have fewer resources to deal with them [1]. Parents may find that caring for the child is too demanding, that they lack privacy, are socially isolated, that their children behave badly, or that their children do not fulfill the tasks expected of them [2].

Studies in this area have mainly focused on the effects of parental role strain on psychological distress. They show that stressors associated with parenthood contribute to anxiety and depression in adults [1,4]. Anxiety and depression in parents can in turn undermine their parenting behaviors and adversely affect their children's well-being and adjustment [5].

The sociodemographic distribution of parental role strain

Few community studies have focused on the distribution of parental role strain. They suggest that mothers experience more parental strain than fathers [6,7], which is usually thought to derive from the mother's greater involvement in child care [1]. Studies also indicate that younger parents experience more parental strain than older ones [2,8], perhaps because the former are less prepared for the parental role or have fewer economic resources. This may

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especially pertain to parental age at first birth, with young first parents being the ones most challenged [1]. Studies also indicate that single parents are worse off than the married or cohabiting, due to the absence of spousal support and lack of economic resources [9]. Working outside the home may, however, lower parental strain as outside work provides economic resources and perhaps temporary relief from stresses and strains related to household obligations [1].

Parental strain may also depend on the composition of families. Community studies suggest that the number of children in the home and the age of the youngest child are associated with increased strain, especially among women [8,9]. Other factors may also have an impact. The medical literature indicates that birth spacing should not be too short or long to secure maternal health [10]. This literature however does not address parental strain. It is also possible that age variability of children, or age range between the youngest and oldest child, affects parents in more or less stressful ways. Finally, gender composition of the children may affect parental strain. To our knowledge, no population study of parental strain has assessed the potential effects of birth spacing, age variability, or the gender composition of children.

It is not clear how education and income of parents relate to parental strain, since higher parental education and income are found to be related either to more strain [2], less strain [6], or not related [8]. The discrepant results may derive from the fact that income and education are associated with other variables, such as the number and ages of children and parental age at first birth, which in turn affect parental strain and need to be taken into account. Furthermore, it is not known whether such strain varies across residential groups. Parental responsibilities and demands may be different in modern urban communities as compared to smaller, more traditional rural ones, and childcare services may also differ between the two environments, affecting the stresses and strains of parenthood. For example, parents in rural communities may have poorer access to formal child care services, be more directly involved in caring for their children during regular days, and rely more on informal assistance [11].

An important neglected issue in population studies of parental role strain concerns the impact of a child's illness or disability. Chronic illness of a child can place continuous demands on parents, compounding the difficulties that otherwise may accompany the parental role. Health sciences research has repeatedly documented stress in parents caring for a chronically ill or disabled child [12]. However, these studies are usually based on specialized groups of children and children with specific diseases or illnesses, thus excluding parents of healthy children or children that are taken care of in the home.

The parent's own long-term illness or disability may also contribute to strain in the parental role. This may be due to conflicting obligations when caring for self and others, or the debilitating effects of the parent's illness on his or her functional ability and task performance. As in family studies of children's long-term illnesses, studies of the effects of parental illness on family life have primarily used specialized and clinical samples of parents, and mostly focused on the psychosocial adjustment of children, with mixed results [13,14].

Some studies suggest that the extent of parental role strain within subgroups of parents differs between fathers and mothers, with mothers being more prone to strain [3,8]. For example, parenthood may be less positive for single mothers than single fathers due to poorer finances and less assistance with child care from friends and extended family [9,15]. Outside employment may also benefit mothers less because of lower wages or less rewarding jobs [9]. Younger children may also affect mothers more than fathers because of mothers' greater parental involvement when the children are young [1,7]. However, researchers seldom provide statistical evaluation of such interactions with gender when predicting parental strain [16].

Furthermore, it is not known whether chronic illness or disability of a child impacts groups of parents differently. It has been suggested that having a child with chronic illness in the home is more stressful for mothers because of their greater caregiving responsibilities [17]. Similarly, low-income and non-employed parents who have a chronically ill child may be especially vulnerable to strain, due to the negative impact of long-term illness on the financial prospects of the family [18]. Other sociodemographic variables may also interact with illness of a child. In a similar way, it is not known whether the parent's own chronic illness or disability affects groups of parents differently—that is, whether group membership interacts with long-term illness/disability of parent when predicting parental strain.

Finally, previous reports indicate that parental and family characteristics may not always relate to parental role strain in a linear fashion. One study found that parental strain increased until middle age and decreased thereafter [16]. The same study also found that parental strain was generally low when there was no child or only one child living at home, but the strain was much greater with more children in the house. Other parental or child characteristics, such as parental age at first birth, age spacing or age variation of children, and age of youngest child, may also be non-linearly related to parental strain [16].

The present study is based on a general population sample of Icelandic parents. In Iceland, both fathers and mothers have high employment rates. Paid parental leave is currently nine months (three for mothers, three for fathers, and three to be split between the parents although usually taken by the mother). Parenting classes are offered through community health services at a nominal fee dealing with issues of parenthood and child rearing. Child enrollment in preschool in Iceland is high, starting at 18–24 months and lasting until the beginning of compulsory primary school at age 6. Furthermore, most Icelandic parents enroll their primary school children in afterschool programs until age nine. There has been general discussion in recent years about gaps in child care both immediately following the end of parental leave and after the age of nine when afterschool programs end [19].

Aim

The aim of the study is to analyze sociodemographic differences in parental role strain in the general population of Icelandic parents of children under 18. More specifically, the study examines variations in parental role strain by parental, family, and child characteristics. These include parental age, parents' genders, marital status, residence, employment, education, and income, number of children living at home, age of youngest child, age range and average spacing of children, gender composition of children, and whether the parent or a child has a chronic illness or disability. In particular, the study considers linear and curvilinear effects of the sociodemographic variables and their interactions with gender and chronic illness/disability of parent or child.

Method

Sample and procedure

The study uses data from the national Health and Ways of Living Survey (HWLS), which took place from January to May 2015. It included Icelanders, age 18–75 years, randomly sampled from the Icelandic National Register, who resided in Iceland at the time of the survey [20]. The administration of the survey and construction of questionnaire followed the Tailored Design Method (TDM) – a comprehensive mail and internet survey methodology [21]. Respondents were given the option of answering the questionnaire electronically, although most chose to answer via mail. A total of 1599 respondents returned valid questionnaires (response rate 58%). The present study analyzes a subsample including all parents of children under 18 (N=605). Comparison between the parental sample and population estimates for parents of children under 18 showed similar sociodemographic breakdowns. Some underrepresentation of males and younger individuals was addressed by weighing the sample by age and gender to more accurately represent the parental population.

The average age of parents in the study was 39.5 years (range: 20–69), and the average number of children living at the parent's home was 2.0 (range: 0–7). The median annual family income was 9.02 million ISK (the equivalent of 58,500 Euros), the same median income as in the total HWLS survey. Fully 84% of the parents had finished high school or university level education, which is higher than the rate of 75% in the total HWLS survey (see Table I for descriptive statistics).

Variables

Parental role strain was measured by an eight-item parental strain scale [2,16]. The scale is a mixture of general and age-specific items. Respondents reported how often they experienced the following: "Your child expects too much from you," "You find it hard to control your child," "Your child treats you without proper respect," "Your child misbehaves in the house," "Your child does poorly in school," "Your child has the wrong kinds of friends," "Your child uses his/her spare time poorly, " "Your child drinks too much alcohol." The frequency of each item was recorded on a five-point scale (from 0 = "Does not happen" to 4 = "Happens almost always"), and the combined strain scale ranged from 0 to 32 (Chronbach's alpha = 0.83). Respondents were also asked whether they had a child at home with a chronic (long term) illness or disability (yes, no). They were furthermore asked whether a doctor had confirmed that they had had any of a list of 47 chronic medical conditions in the past 12 months—for example, arthritis, diabetes, lower back pain, hypertension, coronary heart disease, or lung cancer [22]. A variable was created counting the number of conditions reported. Sociodemographic variables included parents' age and age at first birth, gender, marital status (married/cohabiting, single, divorced/separated, or widowed), residence (Reykjavik metropolitan area vs. countryside), employment (in hours per week), education (Compulsory, Vocational/High school, University level), annual family income (in million Icelandic krónur, translated into euros in this paper for ease of interpretation), number of children living at home, age of youngest child, age range between oldest and youngest child (if two or more children), average spacing of children (in years), % girls, and whether

Table I. Characteristics of the sample (*N*=605).

Variable	%	(*n*)
Age		
18–24	3.3	(20)
25–34	28.3	(171)
35–44	40.5	(245)
45–54	22.7	(137)
55–64	4.9	(29)
65+	0.4	(2)
Age at first birth		
15–19	7.3	(43)
20–24	29.7	(178)
25–29	38.1	(228)
30+	25.0	(149)
Gender		
Male	50.4	(305)
Female	49.6	(300)
Marital status		
Married/Cohabitation	84.1	(508)
Single	11.5	(70)
Divorced/Separated	4.1	(25)
Widowed	0.3	(2)
Residence		
Reykjavik area	58.8	(356)
Countryside	41.2	(249)
Employment		
Not employed	7.6	(44)
Part time	24.3	(141)
Full time	68.2	(395)
Education		
Primary	16.1	(97)
Vocational/High school	34.3	(206)
College	49.6	(298)
Family income		
≤€3,000	23.2	(130)
31,500–57,000 €	35.8	(200)
€57,500+	41.0	(229)
Number of children at home		
None	3.9	(23)
1	28.0	(162)
2	37.9	(220)
3	24.8	(143)
4 or more	5.4	(31)
Age of youngest child		
1 year or less	20.7	(110)
2–5 years	28.7	(152)
6–12 years	32.5	(173)
13–14 years	8.2	(43)
15–17 years	10.0	(53)
Age range of children[a]		
<1–2 years	8.5	(30)
3–4 years	18.2	(64)
5–7 years	23.7	(83)
8–11 years	24.0	(84)
12–16 years	16.3	(57)
17+ years	9.3	(33)
Average spacing of children[a]		
<1–2.4 years	15.3	(52)
2.5–4.4 years	43.8	(149)
4.5–6.4 years	25.7	(88)
6.5+ years	15.2	(52)
Gender composition of children		
% girls[a]		
<50%	37.4	(153)
50%	25.0	(102)
>50%	37.6	(154)
Same vs. both genders[a]		
Same	28.3	(116)
Both	71.7	(293)
Chronically ill child		
Yes	7.7	(46)
No	92.3	(553)
Parents' chronic illness		
No chronic condition	44.3	(267)
1 condition	26.1	(158)
2 conditions	14.0	(84)
3 or more conditions	15.6	(94)

[a]The figures are based on households with two or more children.

the children were the same gender or not. In addition, respondents were asked whether or not they had a child with chronic illness or disability living at home.

Data analysis

The statistical analysis is twofold. First, a bivariate analysis compared mean levels of parental strain scores by sociodemographic context and chronic illness of parent or child. In the bivariate analysis, interval-level predictors were categorized for ease of interpretation. *F*- and *t*-tests were used to assess significance, and strength of association was measured with the Eta coefficient. Secondly, net (adjusted) relationships between independent variables and level of parental strain were assessed using multivariate Ordinary Least Squares (OLS) regression. The regression analysis included all significant first order effects, in addition to significant second order effects (in the case of interval-level variables), and interactions with either gender or chronic illness/disability of parent or child. In the regression analysis, missing responses were handled using the dummy variable missing data procedure by Cohen et al. [23]. This involves including missing cases on independent variables in a regression equation together with dummy variables indicating whether or not cases on these variables were missing. The IBM SPSS Statistics package (version 24) was used for all calculations.

Results

Table II shows bivariate relationships. Parental role strain was related to age of parents, although not in a

simple fashion, as strain was either higher or lower with advancing age. Parental age at first birth was however inversely related to parental strain. Mothers reported more parental strain than fathers. Previously married parents had the highest strain scores of the marital groups. Parental strain increased with the number of children living at home. Age of youngest child and age range of children, were also related to parental role strain, although not in a linear way. The gender composition of children was also related to parental role strain with more strain in households having unequal number of boys and girls. Finally, Table II shows that chronically ill parents, and parents who had a child with chronic illness or disability, experienced greater parental role strain.

Since many of the above predictors are interrelated, some associations with parental role strain may be spurious because of confounding, and interactions and non-linear relationships may be involved. Table III shows multivariate results when regressing parental role strain on explanatory variables, including significant interactive and other nonlinear effects. Parent's age was positively related to parental strain when other variables were controlled, whereas parent's age at first birth was negatively related. Mothers experienced more parental strain than fathers. The previously married experienced more strain than married or cohabiting parents. Parental strain increased with more children in the house. Both age of youngest child and age range of children were curvilinearly related to parental strain. This means that parental strain increased as the children were older and as their age range increased, up to a point, beyond which parental strain started to abate. Table III furthermore shows that chronic illness or disability of a child was not only markedly associated with higher parental role strain on average, but it also interacted with parental employment. The interaction means that parents of chronically ill children experienced lower parental strain than otherwise expected when working outside the home. Outside employment therefore dampened the negative effect of a child's illness on parental role strain. Finally, the table shows that the parents' own chronic illnesses were related to increased parental role strain.

Discussion

Summary

The current study maps sociodemographic and health status variations in parental role strain using a general population sample of parents of children under 18. Consistent with other studies [1], we found that younger first parents experienced greater parental strain. As expected, mothers experienced more strain than fathers, but gender did not interact with other independent variables. This suggests that the sociodemographic and health situations studied affected parental strain in fathers and mothers in much the same way. Married and cohabiting parents fared better than the other marital groups, especially when compared to the previously married/cohabiting. The latter may often lack social and economic resources and face challenges when coordinating parent-child interaction and child care with their previous spouse or cohabitant [24]. The number of children in the house was a distinct predictor of parental strain, consistent with other studies [8,16]. It is reasonable to expect that parental difficulties increase with the number of children because of economic challenges, greater parenting tasks, and conflicting demands of the children [16]. We also found that parental strain increased as the youngest child was older, until mid-adolescence, after which strain decreased. These findings are consistent with developmental studies showing that during early- and mid-adolescence, parents frequently report difficulties adjusting to individuation, autonomy-striving, and authority-questioning of their adolescent child [25]. Greater age variability of children was also related to higher parental strain, up to a point, perhaps reflecting different and sometimes conflicting demands and needs of children at different ages. However, as the age difference becomes large, the older children may take on added responsibilities and relieve their parents of some of the burdens associated with household tasks.

Chronic illness or disability of a child had the strongest effect on parental strain of all predictors considered. The results are consistent with studies of clinical populations that have repeatedly found evidence of substantial stress in parents caring for a chronically ill or disabled child [12]. However, we found that the strain of parenting a chronically ill or disabled child was partly lessened when the parent worked outside the home. Although coordinating work and ill children's needs may sometimes be stressful [26], this interactive effect may suggest rest or relief that parents of chronically ill children experience when getting away from home to attend an outside job. With such a job, they may also find themselves less isolated and better able to provide for their family's needs. Finally, we found that a parent's own chronic illness was related to higher parental strain. This may stem from the negative effects of restricted functioning and support, where the chronically ill or disabled parent struggles to

Table II. Differences in parental role strain by parental and family characteristics.

Variable	Mean	SD	Min–Max	Eta
Age				
18–24	0.43	0.74	0–2	
25–34	3.50	3.47	0–14	
35–44	5.01	4.14	0–20	
45–54	4.45	4.51	0–19	0.24***
55–64	5.28	4.31	0–13	
65+	5.00	5.34	0–10	
Age at first birth				
15–19	6.33	5.18	0–20	
20–24	5.02	4.41	0–20	
25–29	3.92	3.84	0–19	0.19***
30+	3.61	3.45	0–15	
Gender				
Male	3.86	3.73	0–18	
Female	4.77	4.39	0–20	0.11**
Marital status				
Married/Cohabitation	4.30	3.84	0–19	
Single	3.61	5.09	0–20	
Divorced/Separated	6.51	5.20	0–20	0.13*
Widowed	9.00	0.00	9–9	
Residence				
Reykjavik area	4.29	4.15	0–20	
Countryside	4.35	4.02	0–19	0.01
Employment				
Not employed	3.61	4.77	0–20	
Part time	4.52	4.20	0–20	0.05
Full time	4.36	4.00	0–19	
Education				
Primary	4.15	4.45	0–20	
Vocational/High school	4.02	3.89	0–20	0.06
College	4.56	4.09	0–19	
Family income				
€≤31,000	4.51	4.53	0–20	
€31,500–57,000	4.17	4.10	0–20	0.03
€57,500+	4.33	3.85	0–19	
Number of children at home				
None	2.26	3.89	0–14	
1	3.49	3.56	0–14	
2	4.20	3.94	0–18	0.19***
3	5.00	4.31	0–19	
4 or more	5.60	4.70	0–20	
Age of youngest child				
1 year or less	2.47	3.10	0–14	
2–5 years	4.49	3.88	0–19	
6–12 years	5.04	4.23	0–20	0.26***
13–14 years	5.96	5.16	0–18	
15–17 years	5.09	4.26	0–20	
Age range of children[a]				
<1–2 years	3.63	3.72	0–15	
3–4 years	3.92	3.38	0–16	
5–7 years	4.63	3.73	0–15	0.22**
8–11 years	5.56	4.07	0–19	
12–16 years	6.33	5.05	0–20	
17+ years	4.25	4.25	0–13	
Average spacing of children[a]				
<1–2.4 years	4.12	3.70	0–15	
2.5–4.4 years	5.23	4.31	0–20	
4.5–6.4 years	4.90	4.02	0–20	0.09
6.5+ years	4.63	4.30	0–19	
Gender composition of children				
% girls[a]				
<50%	5.26	4.32	0–20	
50%	3.91	3.69	0–19	0.13*
>50%	4.55	3.77	0–20	
Same vs. both genders[a]				
Same	4.24	3.65	0–16	
Both	4.82	4.11	0–20	0.07
Chronically ill child				
Yes	8.84	5.18	0–20	
No	3.94	3.76	0–19	0.32***
Parents' chronic illness				
No chronic condition	3.95	3.73	0–20	
1 condition	4.01	3.97	0–16	
2 conditions	4.43	3.69	0–15	0.16**
3 or more conditions	5.76	5.23	0–20	

*p<05, **p<.01, ***p<.001; two-tailed t-test for two-category comparisons, and F-test for multicategory comparisons.
[a]The figures are based on households with two or more children.

fulfill parental obligations, lacks adequate external support, and may resent excessive burdens placed on his or her spouse or extended kin [27].

Study limitations

Some limitations of this study should be noted. First, it focused exclusively on strains pertaining to the parental role. Stressors pertaining to other roles (e.g. spouse or worker), or to conflicting demands of different roles, were not considered. Second, as mentioned in Method, the parental strains instrument is a mixture of general and age-specific items. As such, it did not include all child conditions and behaviors relevant to parental strain. This is particularly the case with the age-specific items. For example, the instrument did not include sleeping problems of the child or problems feeding the child, which can be considered indicators of parental strain [2]. Since these omitted aspects pertain mostly to younger children, the results, especially the relationship of age of youngest child and parental strain, should be interpreted with proper caution. Third, a higher response rate would have represented the population more precisely, although it should be noted that our comparison between the parental sample and the population of parents of children under 18 showed similar sociodemographic breakdowns. Third, the curvilinear relationships reported should be interpreted with the appropriate caution, as they are based on a limited number of cases and depend on the scales of the relevant variables.

Table III. Adjusted differences in parental role strain by parental and family characteristics (unstandardized OLS regression).

Variable	Parental role strain	
	b	(se *b*)[d]
Age	0.135**	(0.043)
Age at first birth	-0.167***	(0.046)
Gender, 1 = female	0.865**	(0.325)
Marital status[a]		
Married/Cohabitation	-1.663*	(0.765)
Single	-1.173	(0.891)
Employment, hours per week	0.012	(0.008)
Number of children at home	0.541**	(0.195)
Age of youngest child	0.210	(0.126)
Age of youngest child squared	-0.017*	(0.007)
Age range of children[b]	0.151	(0.105)
Age range squared	-0.011**	(0.004)
Chronically ill child	3.827***	(0.591)
Chronically ill child * Employment[c]	-0.049*	(0.024)
Parent's chronic illness	0.244**	(0.095)
Constant	2.675	(1.416)
R^2	0.248	

*$p<0.05$, **$p<0.01$, *** $p<0.001$; two-tailed.
[a]The significance of the variable was assessed using an F differential test, contrasting R^2 of a model including all predictors, and a model including all but the variable in question.
[b]Parents with one child were defined as missing on the age range variable, and missing responses were handled using the dummy variable missing data procedure by Cohen et al. [23]
[c]The term shows the interaction of chronically ill child and employment.
[d]se b denotes the standard error of b

Implications

Our results raise several practical and policy issues that should not be restricted to Icelandic parents. The entry into parenthood is a life changing transition for which individuals are often inadequately prepared [28]. Educational and counseling services can help parents cope with the transition and ease the strain associated with the parental role [29]. Parenting support of this kind should be readily available, especially for younger parents. Furthermore, accessible child care services have been linked to less strenuous family relationships and greater well-being among parents [1].

Preschool is available for Icelandic children from age two in most municipalities, but the gap in services between the end of parental leave and start of preschool is increasingly discussed [19]. Countries and communities with childcare gaps of this sort should generally find mothers more affected than fathers, as mothers typically assume greater child care responsibilities in the early years of parenthood [7]. Readily available after-school programs for school-age children could also ease the relatively high strain levels of parents of school-age children.

Generally, gaps in child care services should be particularly stressful for single parents and large families [9, 16]. Financial strains and the associated long working hours, often experienced by these parents, could be addressed by enhanced child support and child benefit programs.

Parents and children with chronic illness may need specialized assistance and care that is sometimes lacking, adding to other problems associated with ill health [30]. Lack of specialized support for families with chronically ill children in relation to everyday care can make parents feel alone and overwhelmed when their child is facing challenges to health and development. Research shows that supporting parents in managing their ill children's transitions into independence and self-care may ease the strain that parents and their children experience, although more research is needed in developing and testing effective interventions [31].

Future research

Several issues await future research on parental role strain in the general parental population. First, a broader spectrum of child conditions and behaviors relevant to strain should be considered. Second, the precise meaning of observed relationships between sociodemographic and health status variables and parental role strain needs to be clarified. This involves identifying situational and attitudinal variables that may mediate or moderate the relationship between parental background, parental and child health, and parental role strain. Furthermore, future research should consider life strains in the various domains of parental life—that is, parental, spousal, financial and job-related – and how these strains are connected and distributed in the parental population in order to further identify parental groups exposed to various kinds and levels of life strains [7]. Finally, more research is needed in developing and testing interventions empowering parents and their children and easing the strain that they often experience. This includes supporting parents in managing their children's illness and positively affecting their psychosocial development.

Conclusions

In short, the study finds that substantially higher levels of parental strain than other parents are experienced by mothers, chronically ill parents, parents of chronically ill children, and parents who have their first child at an early age, have many children, a mid-adolescent child as their youngest child, or have children quite dispersed in age. A number of measures to address the challenges these parents face should be considered. These include child benefit programs, accessible and affordable child care services, public assistance, and social and health care services, not

least for chronically ill or disabled parents or children. Addressing excessive parental strain could not only contribute to improved parental mental health, but also help create a family environment benefitting the psychosocial development of children.

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Conflict of interest

The authors declare that there is no conflict of interest.

Ethical Approval

The last author of the study is the principal investigator responsible for questionnaire design and administration of the national postal health survey of Icelandic adults, on which the study is based. The questionnaire and administration of the national health survey was approved by the relevant human subjects authority in Iceland; namely, the National Bioethics Committee of Iceland (Vísindasidanefnd), and reported to the Icelandic Data Protection Authority (Persónuvernd).

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