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ORIGINAL ARTICLE IN HEALTH CARE POLICY

Need and utilization of primary health care among long-term unemployed Finns

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Abstract

Introduction: Aim of this paper was to identify the attributes of primary health care utilization among long-term unemployed Finns, and to examine whether access to care and the choice of provider differ with respect to employment status.

Methods: Data on primary health care utilization were derived from two sources; a targeted questionnaire about the use of services and quality of life among long-term unemployed individuals, and the Welfare and Services in Finland Survey, covering the general population. A two-part econometric model was applied in order to separate between the probability and level of utilization. The statistical analysis allowed predicting the monetary costs of primary care

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utilization. In this context, a non-parametric smearing factor was used to adjust for retransformation bias. In addition, a distinction between the level of costs and number of visits was taken to account for the effect of unit cost variation.

Results: The analyses indicated that the utilization of primary health care services among the long-term unemployed varied with respect to gender, self-rated health status and economic situation, place of residence, marital status and duration of unemployment. The scope of analysis was shown to be fundamental for the interpretation of the comparative results. Taking into account the provision of occupational care services inverted the positive effect of long-term unemployment on primary care utilization. Further, while the costs of utilization were independent of employment status, long-term unemployment had a distinct reducing effect on the number of medical visits.

Discussion and Conclusion: Despite of greater health care needs, the long-term unemployed sought less visits to more costly public primary care services. In order to confront unmet health care needs among the long-term unemployed, public sector interventions should be targeted accordingly, and in particular, involve gender specific social marketing measures.

KEY-WORDS: delivery of health care; health care utilization; long-term unemployment; primary health care; two-part model.

Riassunto

Introduzione: L’obiettivo di questo studio è stato quello di identificare le caratteristiche dell’utilizzazione dell’assistenza sanitaria di base tra i disoccupati finlandesi di lunga durata e

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quello di esaminare se l'accesso alla cura e la scelta del fornitore differiva rispetto allo stato di occupazione.

Metodi: I dati sull'utilizzazione dell'assistenza sanitaria di base sono stati ottenuti da due fonti: un questionario mirato sull'uso dei servizi e la qualità della vita tra i disoccupati di lungo durata e lo Studio Welfare and Services effettuato in Finlandia sulla popolazione generale. Un duplice modello econometrico è stato applicato per separare le probabilità dai livelli di utilizzazione. L'analisi statistica ha consentito di prevedere i costi monetari dell'utilizzazione dei servizi di assistenza primaria.

In aggiunta, una distinzione tra il livello dei costi ed il numero di visite è stato fatto per tenere in considerazione la variazione del costo unitario. In questo contesto il metodo non parametrico smearing è stato usato per tener conto del bias di ritrasformazione. In aggiunta, una distinzione tra il livello dei costi ed il numero di visite è stato considerato per l'effetto di variazione del costo unitario.

Risultati: Le analisi hanno indicato che l'utilizzazione dei servizi di assistenza sanitaria di base tra i disoccupati di lungo durata variava rispetto al genere, allo stato di salute ed economico percepito, alla residenza, allo stato coniugale ed alla durata della disoccupazione. L'analisi si è dimostrata fondamentale per l'interpretazione dei risultati comparativi. Tenere in considerazione la fornitura dei servizi di assistenza aziendali ha invertito l'effetto positivo della disoccupazione di lunga durata sull'utilizzazione dei servizi di assistenza primaria. Inoltre, mentre i costi di utilizzo erano indipendenti dallo stato di occupazione, la disoccupazione di lunga durata aveva un effetto distinto di riduzione del numero delle visite mediche.

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Discussione e Conclusione: Nonostante le maggiori necessità di cura, i disoccupati di lunga durata si sono sottoposti ad un minor numero di visite e a servizi di assistenza primaria pubblici più costosi. Per confrontare i bisogni di assistenza sanitaria rimasti insoddisfatti tra i disoccupati di lunga durata, interventi nel settore pubblico dovrebbero essere opportunamente mirati ed in particolare coinvolgere misure di social-marketing basate sul genere.

TAKE-HOME MESSAGE:

In Finland, the long-term unemployed were found to have unmet primary health care needs. In comparison to the employed population with access to occupational primary care, the long-term unemployed mainly used public primary care services with higher out-of-pocket payments and public costs of provision.

Competing interests: none declared

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INTRODUCTION

Over the past three decades, population health in Finland has developed favorably. The share of the population in good self-assessed health has steadily increased and the incidence of long-term illness has taken a falling trend [1–4]. At the same time, the health gap between socio-economic groups has grown wider [5]. The most adverse health shortages have accumulated among marginal population groups with several disadvantageous conditions related to psychological, social and economic resources. The underlying mechanisms leading to broadening health gaps are not straightforward to identify, but evidently individuals being relatively disadvantaged in terms of, say income, often also tend to be disadvantaged in other respects, such as employment status, housing conditions, social networks and education. While poor health cannot solely be attributed to the lack of access to health care services, a clear divergence in the choice of service provider by socioeconomic groups exists. According to [6], the use of public primary care services in Finland was strongly concentrated into the lower income groups, while the use of occupational care and private sector services was positively related to income. The number of visits to an occupational care general practitioner was three-fold in the highest income group in comparison to the lowest income group. In addition, individuals with lower incomes faced substantially longer waiting times for primary care services. A major part of those who had waited unreasonably long for access to a medical doctor had waited for an appointment to a public sector general practitioner, whereas appointments to occupational or private care were usually due within the next two days [6].

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In Finland, occupational health care services are largely available for employees at the public and private sectors. The statutory occupational health care covers a wide range of preventive measures and in addition employers may organize voluntary medical care, which is provided free of charge to the employees. About one-half of the costs of occupational health care is financed by the employers, the other half being financed by the Social Insurance Institution. In contrast to complimentary occupational care health services, public primary care services often involve a user fee. The maximum fees charged for municipal health services are determined by legislation. Municipalities may opt to use lower rates or provide the service free of charge. In 2017 the maximum user fee for a public sector general practitioner visit was EUR 20,60 for three first visits and thereafter additional visits were complimentary. Visits to a public sector nurse were free of charge, and some municipalities (for example Helsinki) provided general practitioner services free of charge.

Unemployment increased drastically in European countries from the beginning of the recession in 2008. Nearly half of the 22 million unemployed in the European Union in 2015 had been out of work for 12 months or longer. As from 2015, the number of long-term unemployed fell by 11% on EU average, but variation across European countries remained substantial. While long-term unemployment decreased in some countries (Estonia, Bulgaria, Ireland, Poland, UK), it increased in France, the Netherlands, Sweden, Croatia, Austria, Latvia, Romania, Luxembourg and Finland [7], 2016). In Finland, long-term unemployment began to decline in 2017. In the beginning of 2018, the number of long-term unemployed who had been unemployed for more

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than a year amounted to 80,600, which was 28,600 less than in the previous year. The number of long-term unemployed men decreased by 16,300 (26%) and that of women by 12,300 (27%) [8].

In studies on population health, unemployment is often associated with adverse mental and physical health conditions [9–12]. While the unemployed tend to be in poorer health than the population in general, it would be naive to conclude that the adverse health outcomes arise merely from a causal relationship between unemployment and economic hardship. Having low incomes may affect physical and mental health negatively, but the underlying mechanisms through which unemployment may lead to poorer health outcomes is known to be a more complex entirety [12]. Ill health may also cause unemployment, and those who are relatively disadvantaged in terms of unemployment histories also tend to be disadvantaged in other respects, such as having low incomes when in work, living in poor housing conditions, having low education, pursuing unhealthy lifestyles and suffering from social isolation [13]. In addition, any discernible relationship between unemployment and health occurring at the level of the population or population sub-groups is likely to display a high degree of variation when examined at more disaggregated levels.

The purpose of the present paper is to identify the attributes of primary health care utilization among long-term unemployed Finns, and to examine whether access to care and the choice of provider differ with respect to employment status.

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METHODS

The data were derived from the responses of a long-term unemployment questionnaire conducted in five large-to middle-sized cities in Finland (Helsinki; Kuopio; Joensuu; Jyväskylä; Lappeenranta). A post questionnaire was sent to 1,571 randomly chosen long-term unemployed residents in these cities between July and September 2017. The questionnaire response rate was 32.5 %, which corresponded to 512 returned forms. In total 86 cases were omitted on the grounds of recent retirement, other labor market exclusion, or incomplete information. The final dataset consisted of 426 working-aged (21 -65) individuals who had been continuously unemployed for more than 12 months prior to the study. Information on the duration of unemployment was received from the register of Employment Services of Finland (URA-database).

In the analyses involving both the long-term unemployed (LTU) and the employed population, LTU data was used jointly with data from the Welfare and Services in Finland 2009 survey (HYPA). The HYPA-survey was based on a random sample of 5,800 individuals aged 18–79 years. The final sample size was 3,993, corresponding to a response rate of 80%. The combined analysis was targeted to those primary care services and explanatory variables that were included and asked in the same manner in both surveys. Consistently to the LTU-survey, only respondents between the age of 21 and 65 were included in the HYPA data. In addition, students and disability pensioners were excluded, leaving a total of 2,843 observations in the final dataset. Relevant descriptive statistics of the two datasets are presented in Table 1.

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Table 1. Descriptive statistics of LTU and HYPA data.

	LTU	HYPA
N	426	2 843
Age (mean)	51.0	45.6
Gender (%)		
Male	53.9	47.6
Female	46.1	52.4

Self-assessed health (%)

LTU	**Male**	**Female**	**Total**
Good	5.3	5.7	5.4
Rather good	42.3	39.7	41.0
Average	19.8	24.7	22.2
Bad	24.7	22.7	23.6
Very bad	7.9	7.2	7.8

HYPA	**Male**	**Female**	**Total**
Good	42.7	45.2	43.9
Rather good	33.6	33.1	33.3
Average	19.0	17.9	18.5
Bad	3.9	2.9	3.4
Very bad	0.8	0.9	0.9

The analysis focused on the utilization of the following primary care services: 1) public general practitioner; 2) public health nurse; 3) occupational care general practitioner; and 4) occupational care health nurse. Occupational health care was regarded a substitute for public primary care, as employees covered by occupational care have little or no incentives for using public primary care services. In order to account for the substitution effect, the analysis on the interrelated data was carried out first, for public primary care services only and secondly, for primary care services

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including occupational health care. On grounds of unavailability of information on the specialty of private sector physician visits, they were not included in the analysis.

Health care utilization data have a substantial proportion of values at zero, and hence the econometric modeling of such "zero-inflated" data is not straightforward. Several related estimation methods have been proposed, including the Tobit model, the two-part model and the sample selection model [14]. In the present study, the two-part model was considered appropriate. In the first part, a logit model of binary responses was fitted on the entire data, giving an estimate of the probability that an individual possessing one or several of the characteristics specified in the model had used primary health care services. The second part applied OLS regression to estimate the effect of the explanatory variables on the level of use for individuals with non-zero utilization. The expected level of primary health care use for an individual possessing particular model inclusive characteristics was calculated for example cases.

The non-zero observations are usually not normally distributed as they tend to be heavily skewed to the right. Therefore, a log transformation of the dependent variable is commonly undertaken in health care utilization analysis. Besides possessing desirable statistical properties, the semi-log or double-log specifications generate estimates with straightforward economic interpretations. In addition, a log transformation shortens the long right tail, lessens heteroscedasticity, and decreases the influence of outliers. The functional form of the models of primary care utilization was tested in the Box-Cox framework. In all models the logarithmic transformation of the dependent variable was statistically supported (i.e. the null hypothesis that the models are the

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same in terms of goodness of fit was rejected by the critical value of Chi-squared at 5 % level in favor of the semi-log model).

As in addition to estimating the effect of the explanatory variables on health care utilization, the purpose of the study was to predict the level of utilization, the estimates on a log-scale were retransformed to the original scale. A non-parametric smearing factor was used to take into account for retransformation bias [15, 16].

The dependent variables in the logit models were the use/non-use of public general practitioner, public health nurse, occupational care general practitioner and occupational care health nurse services. The substitution models were estimated for a dependent variable where the utilization of occupational care services was regarded as a substitute for public primary care utilization for individuals in employment. In the level models, the monetary value of the dependent variables was calculated for individuals with non-zero utilization by multiplying the total number of visits by the unit cost of the services [17]. As the unit costs of occupational care services were lower than those of public primary care, the respective level models were also estimated for the number of visits. In the other level models the level of costs and the level of visits were interchangeable as a constant unit cost was used for this utilization data.

The independent variables included in the LTU probability models were dummies for: gender (female), age (35-54; 55-65), region (Helsinki), self-rated health status (bad/very bad) and economic situation (difficult/very difficult). As for the self-rated health variable, a five-item scale was included in the questionnaire (good, rather good, average, bad or very bad). The question about household economic situation concerned the easiness of covering compulsory household

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expenditures (very easy, easy, rather easy, rather difficult, difficult or very difficult). The same set of explanatory variables was applied in the level models, except for self-rated health status, which turned out to be an insignificant predictor of the level of primary care utilization. In addition, a dummy for marital status (married) and a continuous variable of unemployment duration (UNEMPDUR) were included.

For the probability models estimated on the combined (LTU and HYPA) data, the independent variables were: gender (female), age (35-54; 55-65), self-rated health status (bad/very bad), economic situation (difficult/very difficult) and a dummy for long-term unemployment (LTU). In specifications of the level models, an identical set of explanatory variables was supported and used in the estimations.

RESULTS

Patterns of primary care utilization

A graphical illustration of non-zero utilization of outpatient services among the long-term unemployed (LTU) and the general population in employment (HYPA) is presented in Figure 1. This setting reflects the baseline for the probability models in the forthcoming econometric analyses. More than 60% of the LTU had used public general practitioner services in the preceding 12 months, while the corresponding share of those in employment was about 30%. The LTU also had a substantially higher percentage of public health nurse services use (45% vs. 23%), and a slightly higher use of outpatient clinic specialist services (31% vs. 23%). One-third of the employed had used occupational care general practitioner services and about one-fourth occupational health nurse services. As individuals with permanent employment were likely to

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have substituted these services for public primary care services, the total percentage of general practitioner (65%) and health nurse services (50%) use turned out slightly higher for the employed.

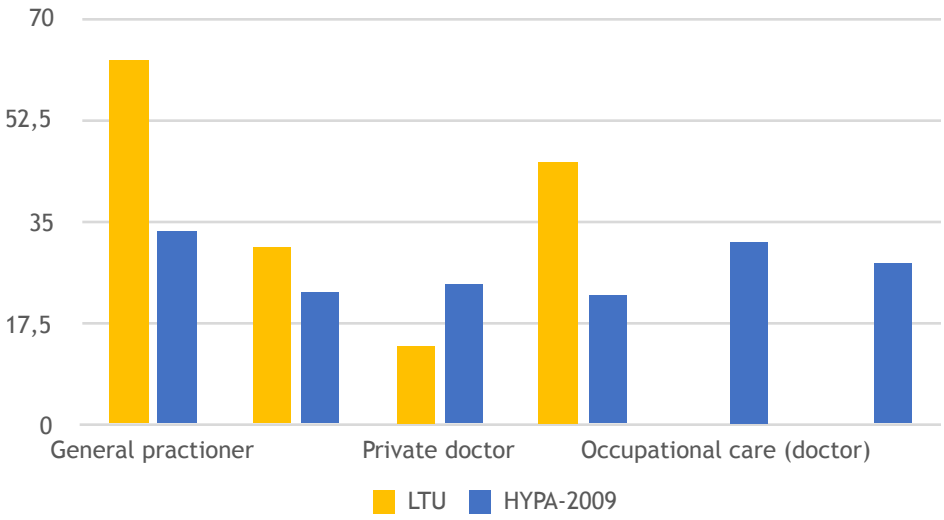

Figure 1. Percentage of individuals with outpatient health services use in last 12 months (LTU = long-term unemployed; HYPA-2009 = general population in employment).

As regards the level of use, those employed who had used public general practitioner services, had made more visits to them than the LTU (1.9 vs 1.6) (Figure 2). Assuming that occupational primary health care services were substitutes for public primary care for the employed, the difference in the total number of visits to a general practitioner increased further (2.8 vs 1.6). The number of visits to a public health nurse was equal (1.8), whilst accounting for substitution increased the total number of health nurse visits of the employed from 1.8 to 2.3. The employed had also consulted more often outpatient clinic specialists and private doctors.

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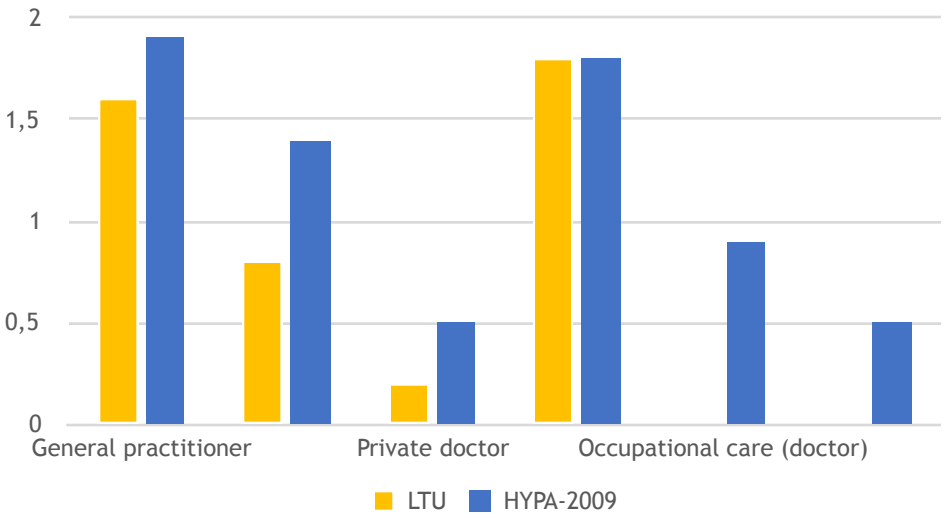

Figure 2. Number of visits to outpatient health services among the long-term unemployed (LTU) and the general population in employment (HYPA-2009).

Econometric analysis of primary care utilization

For the long-term unemployed, health status, as measured by self-assessed health, had a distinct effect on the probability of primary care use (Table 2). As indicated by the logit coefficients, poor health was positively related to the probability of having sought public sector care from a general practitioner or a health nurse. In comparison to a reference individual in good health, an individual in poor health was about 1.5 times more likely to have consulted a general practitioner or a health nurse. Another significant explanatory variable of similar magnitude was difficult economic situation, which increased the probability of primary care use in all models except health nurse services, where the relationship was still positive, but not statistically supported. Female gender was positively related to having used general practitioner services, while no effect was found for health nurse services. A female with otherwise similar characteristics as the reference male, had a 1.8 times higher probability of general practitioner use. Living in the

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capital Helsinki had a slight increasing effect on the probability of seeking general practitioner care. By contrast, age had no discernible influence on the likelihood of primary care use.

Table 2. Estimation results of the LTU probability (logit) and level models (OLS).

Variable	**General practitioner**		**Health nurse**	
Probability of utilization	Coef.	P>z	Coef.	P>z
GENDER (female)	0.752***	0.000	0.069	0.731
AGE (35-54)	0.316	0.465	0.006	0.989
AGE (55-65)	0.468	0.278	-0.035	0.933
REGION (Helsinki)	0.551*	0.036	-0.359	0.135
HEALTH STATUS (bad/very bad)	0.511*	0.017	0.479*	0.019
ECONOMIC SITUATION (difficult/very difficult)	0.571**	0.009	0.364	0.079
Constant	-0.838	0.062	-0.569	0.191
N	426		426	
Level of costs	Coef.	P>t	Coef.	P>t
GENDER (female)	-0.007	0.932	-0.058	0.628
AGE (35-54)	-0.303	0.092	-0.406	0.077
AGE (55-65)	-0.365*	0.042	-0.697**	0.003
ECONOMIC SITUATION (difficult/very difficult)	0.161	0.058	0.206	0.087
UNEMPDUR	-0.094*	0.036	0.021	0.757
MARITAL STATUS (married)	0.265**	0.005	0.420**	0.003
Constant	6.093***	0.000	4.728***	0.000
N	262		163	

*Indicates significance at the 0.05 level; **Indicates significance at the 0.01 level; ***Indicates significance at the 0.001 level

However, as regards the level of use, the long-term unemployed in the oldest age group used less general practitioner and health nurse services in comparison to the reference age group. A negative effect on the use/costs of general practitioner services also applied to the duration of

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unemployment. The longer unemployment had lasted the less visits to a general practitioner care occurred. While marital status was an insignificant indicator of the probability of use, and was thus, excluded from the logit models, being married had an obvious increasing effect on the level of primary care use.

Estimation results on the joint analysis excluding occupational care substitution are presented on the left-hand side of Table 3. These models were restricted to include only those employed individuals who had due to the unavailability of occupational health care, or other reasons, used public general practitioner or health nurse services. Again, female gender was a strong predictor of having sought primary care, but had no effect on the level of use after the primary contact. The effect of older age was two-fold; in comparison to the youngest age group, those between ages 35-54 were less likely to have used public general practitioner and health nurse services, whereas an increasing effect applied to those in the age group 55-65. This could be due to a better coverage of occupational care for individuals with well-established occupations and relatively little health problems. As expected, poor health was strongly associated with both the probability and level of primary care use. Long-term unemployment was associated with a highly elevated probability of general practitioner and health nurse use, and while some indication of a lesser quantity of use of these services was implied, the relationship was not statistically supported. As regards the probability and costs of public primary care use, a young unemployed female in poor health had a probability of general practitioner use nine times the probability of the reference individual (young employed male in good health). The corresponding probability

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for public health nurse use was six-fold. The expected public sector costs of total primary care utilization in relation to the reference individual were EUR 770 and EUR 562, respectively.

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Table 3. Estimation results of the probability (logit) and level models (OLS).

Variable	**General practitioner** (public sector)		**General practitioner** (incl. occupational care)	
Probability of utilization	Coef.	P>z	Coef.	P>z
GENDER (female)	0.510***	0.000	0.504***	0.000
AGE (35-54)	-0.216*	0.030	0.252**	0.005
AGE (55-65)	0.290**	0.006	0.356***	0.000
LTU	0.815***	0.000	-0.105	0.391
HEALTH STATUS (bad/very bad)	0.901***	0.000	0.750***	0.000
ECONOMIC SITUATION (difficult/very difficult)	0.299**	0.013	0.039	0.738
Constant	-1.148***	0.000	-0.300***	0.000
N	3 269		3 269	
Level of costs	Coef.	P>t	Coef.	P>t
GENDER (female)	0.043	0.281	0.132***	0.000
AGE (35-55)	-0.038	0.480	-0.128**	0.006
AGE (55-65)	-0.063	0.241	-0.049	0.328
LTU	-0.105	0.056	0.058	0.327
HEALTH STATUS (bad/very bad)	0.323***	0.000	0.439***	0.000
ECONOMIC SITUATION (difficult/very difficult)	0.097	0.077	0.150**	0.007
Constant	5.366***	0.000	5.102***	0.000
N	1 157		1 833	
	Health nurse (public sector)		**Health nurse** (incl. occupational care)	
Probability of utilization	Coef.	P>z	Coef.	P>z
GENDER (female)	0.431***	0.000	0.313***	0.000
AGE (35-54)	-0.658***	0.000	-0.052	0.568
AGE (55-65)	-0.189	0.096	-0.147	0.138
LTU	0.586***	0.000	-0.399***	0.001
HEALTH STATUS (bad/very bad)	0.780***	0.000	0.482***	0.000
ECONOMIC SITUATION (difficult/very difficult)	0.214	0.093	-0.078	0.496
Constant	-1.320***	0.000	-0.286***	0.000
N	3 269		3 269	
Level of utilization	Coef.	P>t	Coef.	P>t
GENDER (female)	0.111	0.062	0.127**	0.003
AGE (35-54)	-0.330***	0.000	-0.336***	0.000
AGE (55-65)	-0.279***	0.000	-0.162**	0.006
LTU	-0.100	0.218	0.164*	0.033
HEALTH STATUS (bad/very bad)	0.416***	0.000	0.561***	0.000
ECONOMIC SITUATION (difficult/very difficult)	0.058	0.463	0.146*	0.038
Constant	4.627***	0.000	4.185***	0.000
N	764		1462	

*Indicates significance at the 0.05 level; **Indicates significance at the 0.01 level; ***Indicates significance at the 0.001 level

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Allowing for occupational health care substitution had a marked effect on the patterns of general practitioner and health nurse utilization (Table 3, right hand side). Gender and poor health still strongly increased the probability of using these services, whereas in these models also older age had positive sign in both age groups. The effect of long-term unemployment changed for the opposite. Being long-term unemployed had a reducing effect on the probability of general practitioner and health nurse use when comparable service use taking place in occupational health care was included in the analysis. Long-term unemployment had no discernible effect on the level of costs of general practitioner services and a slight increasing effect on the level of costs of health nurse services.

While long-term unemployment had no distinguishing effect on the level of costs of primary care utilization, a clear difference emerged when the number of visits was used as the dependent variable instead of the level of costs (Table 4). In these models, long-term unemployment had a clear reducing effect on the number of visits to a general practitioner, and a smaller negative effect on visits to a health nurse. The analysis indicated that regardless of the lower level of visits to primary care by the long-term unemployed, the utilization of these services incurred about the same level of total costs relative to the employed.

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Table 4. Estimation results of the level models (number of visits) (OLS).

Variable	**General practitioner**		**Health nurse**	
Level of utilization (number of visits)	Coef.	P>t	Coef.	P>t
GENDER (female)	0.092**	0.004	0.082*	0.033
AGE (35-55)	-0.016	0.706	-0.206***	0.000
AGE (55-65)	-0.083	0.071	-0.160**	0.003
LTU	-0.277***	0.000	-0.112	0.107
HEALTH STATUS (bad/very bad)	0.360***	0.000	0.469***	0.000
ECONOMIC SITUATION (difficult/very difficult)	0.076	0.140	0.083	0.188
Constant	0.801***	0.000	0.653***	0.000
N	1 833		1 462	

*Indicates significance at the 0.05 level; **Indicates significance at the 0.01 level; ***Indicates significance at the 0.001 level

DISCUSSION AND CONCLUSION

The utilization of primary health services among long-term unemployed Finns varied with respect to gender, self-assessed health, economic situation, region, marital status and duration of unemployment. Being in poor self-assessed health clearly increased the likelihood of having sought care at a public sector general practitioner or a health nurse. However, poor health had no effect on the level of use of these services after the primary contact. A similar relationship applied to female gender. Long-term unemployed women had a 75 percent higher probability of visiting a general practitioner than men with similar characteristics. The amount of care received was not related to gender. Those long-term unemployed who were in a difficult economic

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situation were more likely to have seen a general practitioner. In addition, living in the capital Helsinki increased the probability of general practitioner utilization. As for the level of primary care utilization, the duration of unemployment was inversely related to the number of visits to a general practitioner. Being married had a marked increasing effect on both general practitioner and health nurse services utilization.

In relation to the population in employment, the results were two-fold. When primary care utilization was analyzed in the context of the long-term unemployed and those employed who had used public primary care services, long-term unemployment had a distinct increasing effect on the probability of having used primary care services. Conversely, the effect on the level of use was negative, indicating that long-term unemployment had a decreasing effect particularly on the number of general practitioner visits, despite of the greater likelihood of seeking care. Moreover, female gender, poor self-assessed health and a difficult economic situation emerged as strong predictors of the probability of primary care utilization.

In the alternative approach, where occupational health care was considered as a substitute for public primary care, the utilization of general practitioner services of the long-term unemployed did not differ significantly from that of the employed. While some indication of a lower probability of seeking general practitioner care among the long-term unemployed emerged, the level of the costs of care was unrelated to employment status. As for the use of health nurse services, the long-term unemployed were less likely to seek care, but had a higher level of costs of the services. However, as the unit cost of occupational primary care was lower than that of public primary care, long-term unemployment had a distinct reducing effect on the level of

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primary care utilization when analyzed in the context of number of visits. Even in this framework, women were about 1.5 times more likely to use primary care services and generate on the average EUR 50 higher costs than men. The cost of primary care for a woman in poor health was EUR 230 more than for a man in good health.

The study indicated that the effect of long-term unemployment on the utilization of primary care services was dependent on the scope of analysis. Taking into account the rather extensive supply of occupational care services gave rise to a markedly different interpretation of the results. According to this formulation the long-term unemployed and the employed with otherwise similar characteristics generated about equal costs of primary care utilization. However, when the level of utilization was instead analyzed in relation to the number of medical visits, long-term unemployment had a distinct negative effect on the amount of care received. Hence, in comparison to the employed population, the long-term unemployed used a smaller quantity of more costly primary care services.

The fact that the long-term unemployed were not more likely to seek primary care than the unemployed despite of a pronounced linkage of unemployment and poor self-assessed health indicates the existence of unmet health care needs. More than 30 percent of the long-term unemployed rated their health as bad or very bad, while the corresponding share among the employed was less than 5 percent (see Table 1). The distribution of poor health among the long-term unemployed was not systematically related to gender although in general women used primary care services clearly more often than men. The study found no clear evidence on inequity related to financial barriers of primary care. Rather, shortages in the primary care

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utilization of the long-term unemployed seemed to arise from attributes associated with gender and a generally disadvantageous life situation. In order to confront unmet health care needs particularly among the long-term unemployed male population, public sector interventions should be targeted accordingly and involve gender specific social marketing measures. Further analysis of the obstacles for access and other underlying reasons for unmet needs will be helpful for designing such interventions, and to assess their cost-effectiveness.

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References

1. Arinen S, Häkkinen U, Klaukka T, Klavus J, Lehtonen R, Aro S. Health and the use of health services in Finland: Main findings of the Finnish Health Care Survey 1995/96 and changes from 1987. SVT Health Care Stakes and Kela; Report No.: 1998/5.
2. Kautto M. (eds.) Welfare and Services in Finland 2006. Helsinky: Stakes; 2006.
3. Vaarama M, Moisio P, Karvonen S (eds.). Welfare and Services in Finland 2010 (in Finnish). Helsinky: National Institute for Health and Welfare (THL); 2010.
4. Vaarama M, Karvonen S, Kestilä L, Moisio P, Muuri A (eds.). Welfare and Services in Finland 2014 (in Finnish). Helsinky: National Institute for Health and Welfare (THL); 2014.
5. Karvonen S, Martelin T, Kestilä L, Liina J. Income-related health differences still substantial. Social state in Finland 3/2017 (in Finnish). Available from: https://www.julkari.fi/bitstream/handle/10024/135167/URN_ISBN_978-952-302-896-8.pdf?sequence=1 (last accessed on 28/08/2018).
6. Klavus J. Health, health services use and experiences of services in Finland. In: Vaarama M. Moisio P. and Karvonen S. (eds.). Helsinky: Welfare and Services in Finland; 2010.
7. Duell N, Thurau L, Vetter T. Long-term unemployment in the EU: Trends and Policies. Finland: Bertelmanns Stiftung, Biefeld; 2016.
8. Statistics Finland. Available from: https://findikaattori.fi/fi/37 (last accessed on 28/08/2018).

Published Online September 25, 2018 doi10.19204/2018/ndnd1

9. Shortt SED. Is unemployment pathogenic? A review of current concepts with lessons for policy planners. Int J Health Serv. 1996;26(3).

10. Weber A, Lehnert G. Unemployment and cardiovascular diseases: A causal relationship? Int Arch Occup Environ Health. 1997;70(3):153–160.

11. Mathers CD, Schofield DJ. The health consequences of unemployment: the evidence. Med J Aust. 1998;168(4):178–182.

12. McKee-Ryan F, Song Z, Wanberg CR, Kinicki AJ. Psychological and physical well-being during unemployment: a meta-analytic study. J Appl Psychol. 2005;90(1):53–76.

13. Wagstaff A. The demand for health: theory and applications. J Epidemiol Community Health. 1986;40:1–11.

14. Diehr P, Yanez D, Ash A, Hornbrook M, Lin DY. Methods for analyzing health care utilization and costs. Annu Rev Public Health. 1999;20:125–144.

15. Duan N. Smearing estimate: a nonparametric retransformation method. J Am Stat Assoc. 1983;78:605–610.

16. Manning WG. The logged dependent variable heteroscedasticity and the retransformation problem. J Health Econ. 1998;17:283–295.

17. Kapiainen S, Väisänen A, Haula T. Unit costs of health and social services in Finland 2011. Helsinky: National Institute for Health and Welfare; 2014: pp. 3.