Social capital, trust in the health care system and self-rated health: the role of access to health care in a population-based study

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Abstract

The aim is to investigate the relationship between institutional trust in the health care system and self-rated health, and whether the strength of this association is affected by access to health care services. The 2004 public health survey in Scania is a cross-sectional study. A total of 27,963 respondents aged 18-80 years answered a postal questionnaire, which represents 59% of the random sample. A logistic regression model was used to investigate the association between institutional trust and self-rated health. Multivariate analyses of self-rated health were performed in order to investigate the importance of possible confounders (age, country of origin, education, economic stress, generalized trust in other people, and care-seeking behaviour) on this association. A 28.7% proportion of the men and 33.2% of the women reported poor self-rated health. A total of 15.0% and 58.3% of all the respondents reported "very high" and "rather high" trust in the health care system, respectively. Almost one-third of all respondents reported low institutional trust. Respondents born abroad, with low/medium education, low generalized trust and low institutional trust had significantly higher odds ratios of poor self-rated health. Multiple adjustments for age, country of origin, education, economic stress and horizontal trust had some effect on the significant relationship between institutional trust and poor self-rated health, for both men and women, but the additional introduction of care-seeking behaviour in the model substantially reduced the odds ratios. In conclusion, low trust in the health care system is associated with poor self-rated health. This association may be partly mediated by "not seeking health care when needed". However, this is a cross-sectional exploratory study and the causality may go in both directions.

Keywords: social capital, institutional trust, horizontal trust, self-rated health, access to health care, care-seeking behaviour

Word count (Abstract): 272

Word count (Text): 4,103

Introduction

Health systems are an essential part of society in any country, rather than just a delivery system for health care interventions (Gilson, 2005). Some societies have effective institutions and healthy citizens while other societies do not (Kawachi, Kennedy, & Glass, 1999). Social capital may be an explanation for such differences.

Social capital is defined as those features of social structures- such as levels of interpersonal trust, norms of reciprocity and mutual aid- which constitute resources which may facilitate interaction between individuals and groups of individuals to achieve collective action (Coleman, 1990; Putnam, 1993). Social capital may be important for the improvement of government performance and the functioning of democracy as well as the functioning of the economic system (Putnam, 1993), the prevention of crime (Kennedy, Kawachi, Prothrow-Stith, Lochner, & Gupta, 1998), the maintenance of population health (Kawachi, & Kennedy, 1997; Lindström, 2004a) and lower mortality rates (Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997). Social capital promotes health through community-level processes by several different mechanisms. These mechanisms include providing affective support and being a source of self-esteem and mutual respect, increasing access to local services and amenities, promoting the adoption of health-related behaviour norms, social control over deviant health related behaviours, transmission of health information and preventing violent crime (Kawachi, Kennedy, & Glass, 1999).

Social capital is a complex concept which has been measured at the macro (countries, regions), meso (neighbourhoods), micro (social networks) and individual psychological (trust) levels of analysis (Macinko & Starfield, 2001). While some authors suggest that social capital concerns "ties" and norms which bind individuals together within constituent elements of large organisations or link them across a variety of institutional and formal and

informal associational realms (Rueschemeyer & Evans, 1985), other authors regard social capital as a "moral resource" such as trust (Fukuyama, 1999). Social capital has mostly been measured as social participation/social networks or trust (Putnam, 1993). Social participation/social networks is an observable feature of social capital that can be measured either as the density of organisations in a geographical area, or by asking respondents to what extent they are engaged in formal and informal social activities in society (Cattell, 2001). Trust reflects features of social capital that are possible to objectively measure to a lesser extent. Trust includes the expectation that an individual or institution will act competently, fairly, openly, and with concern (Hall, Dugan, Zheng, & Mishra, 2001; Gilson, 2003). Trust is a relational phenomenon which enhances cooperation. The increased propensity for cooperation also enhances trust in a process of mutual dependence, a process which results in an accumulation of social capital (Putnam, 1993). Trust can be divided into vertical trust in the institutions of society (institutional trust), and horizontal trust or generalized trust in other people (Putnam, 1993).

Institutional or vertical trust concerns the trust of the citizens in the institutions, especially the public institutions of society (Veenstra, & Lomas, 1999). It has been argued that the levels of trust vary between societies with the level of social connectedness (Thiede, 2005). The health care system is an institution which often has been discussed in relation to population health. The performance of any health care system is based on institutional trust. It allows patients to trust providers without any personal knowledge of the health workers which represent the health care system (Russell, 2005). Trust is central to good interactions between patients and providers because the patient's uncertainty about health conditions, especially serious ones**,** increases the need to have confidence in a physician's intentions and

decisions (Mechanic, & Meyer, 2000). Patient trust in health care providers has been claimed to be associated with the clinical or technical competence of the providers, the interpersonal quality of care (e.g., listening, respect), and the concern for the person, not just the disease (Birungi, 1998; Mechanic, & Meyer, 2000; Straten, & Friele, 2002). The relationships and emerging trust between patient and provider can be considered at two inter-related levels. Face-to-face encounters with health providers can build or damage personal trust, which is more likely to increase with long-term doctor-patient relationships (Birungi, 1998; Gilson, 2003). There is also faceless institutional trust such as the reliance that health institutional arrangements influencing service delivery will perform in the best interests of the patient (Birungi, 1998; Gilson, 2003). It has been claimed that trust underpins the cooperation within the health care system that is necessary to health production, facilitates communication (Gilson, 2003), facilitates disclosure of medically relevant information, and is important for patients' willingness to seek health care (Hall, Dugan, Zheng, & Mishra, 2001; Gilson, 2003; Russell 2005). Trust in the health care system also encourages use of services (Gilson, 2003; Russell 2005), submission to treatment, and patient compliance (Hall, Dugan, Zheng, & Mishra, 2001). Moreover, institutional trust is important for economic and political viability of hospitals, insurers and health care systems due to the patient support and use of services (Tibandebage, & Mackintosh 2005).

Low levels of interpersonal (horizontal) trust are related to low levels of trust and confidence in public institutions and government (Putnam, 1993; Brehm, & Rahn, 1997), low levels of political participation (Putnam, 1993; Kennedy, Kawachi, Prothrow-Stith, Lochner, & Gupta, 1998), and reduced efficacy of government institutions (Putnam, 1993). Mistrust and poor relationships with public providers can increase the financial cost burdens

related to illness and can hinder discouraged people from seeking health care (Tibandebage, & Mackintosh, 2005). Without trust patients may well not gain access to health care services (Russell, 2005; Tibandebage, & Mackintosh, 2005; Rowe, & Calnan, 2006), and may not disclose all important medical information (Rowe, & Calnan, 2006). It should be noted that such plausible barriers to health care and, in the next step in the chain of causality, health are in accordance with the health belief model (Rosenstock, Strecker & Becker, 1988), in which the dimension "perceived barriers" has been shown to be among the strongest dimensions (Janz & Becker, 1984).

An important factor related to care-seeking behaviour is trust in the health care system. Trust provides a context, in which patients and providers can work effectively to establish and achieve care objectives (Perry, et al, 1999; Mechanic & Meyer, 2000). Several studies have found that system trust could help the development of interpersonal trust, but it is not known how interpersonal (generalized/horizontal) trust affects institutional trust (Hall, Camacho, Dugan, & Balkrishnan, 2002; Gilson, 2003).

Low trust has been shown to be associated with poor self-rated health (Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997). In Sweden self-rated health has been claimed to be associated with features of social capital such as generalised trust in other people and social participation (Kawachi & Kennedy, 1997; Lindström, Moghaddassi, & Merlo, 2004). Self-rated health - recommended by the WHO for monitoring in health surveys- is a multifaceted measure of overall health. Self-rated health assessment is used increasingly to measure population health, and has been shown to be a significant predictor of morbidity and mortality (Kaplan et al. 1996; Franks, Gold, & Fiscella, 2003). Besides the impact of specific diseases, self-rated health could be affected socio-demographic and socio-economic

factors (Franks, Gold, & Fiscella, 2003), as well as social capital (Kawachi, Kennedy, & Glass, 1999; Lindström, 2004; Lindström, Moghaddassi, & Merlo, 2004). Such measures allow clinicians and the health care system to identify individuals and groups at risk for poor health outcomes.

One recent study in the USA found that lack of trust in the health care system was significantly associated with self-rated health (Armstrong et al., 2006). To our knowledge there are no other studies concerning this topic. To our knowledge there is no investigation on the effects care-seeking behaviour on self-rated health. In this study we aim to investigate the association between self-rated health and institutional (vertical) trust in the health care system with respect to the role of access to health care services.

Objective

To investigate the effects of institutional trust in the health care system and care-seeking behaviour on self-rated health in the population of Scania, southern Sweden during the autumn (September-December) of 2004.

Study design and setting

Study population

Data from the 2004 public health survey in Scania in southern Sweden were used. A postal questionnaire was sent out to a random sample of 47,621 persons aged 18-80 years during the autumn (September-December) of 2004. Two letters of reminder were sent to the respondents, and a subsequent phone call was made to the remaining non-respondents. A

total of 27,963 respondents returned complete answers (right persons in the household according to age and sex answered the questionnaire). The response rate of this cross-sectional study was 59%. The random sample was weighted by age, sex and geographic area in order to increase the statistical power in some smaller administrative areas. In the statistical calculations of this study this has been corrected by a weighted variable, so that the representative prevalences (%) for the entire Scania region are given. The differences in prevalences between the uncorrected and corrected data are very small.

Assessment of variables

Outcome variable

Self-rated health was assessed by the question "How would you rate your general health status?" on a five-point scale (very good=1, good=2, neither good nor poor=3, poor=4, very poor=5). This variable was further dichotomised into good (alternatives 1 and 2) and poor (alternatives 3, 4 and 5) health.

Explanatory variables

Age was divided into five age intervals 18-34, 35-44, 45-54, 55-64, and 65-80 years.

All analyses were stratified by *sex*.

Education was divided by length of education into 9 years or less, 10-12 years, and 13 or more years of education.

Country of origin. All persons born in countries other than Sweden were merged into a single category, which yielded the two categories "Sweden" and "other".

Economic stress was categorized by the answer to the question "How many times during the past year did you not have money enough to afford the food or the clothes you and your family need?" There were four alternative answers: (I) "Every month", (II) "Approximately six months a year", (III) "Very occasionally", and (IV) "Never".

Generalised/horizontal trust in other people is a self-rated variable that encompasses an individual's perception of generalised trust in other people. It was appraised by the item "Generally, You can trust other people" with the four alternative answers: "Do not agree at all", "Do not agree", "Agree", and "Completely agree". It was dichotomised with the two first alternatives as low trust and the two latter alternatives depicting high trust.

Trust in the health care system (institutional/vertical trust) is a self rated item which encompasses an individual's trust in the health care system. The question was "What trust do you have in the health care system" with the five alternative answers: "Very high trust", "Rather high trust", "Not high", "No trust at all", and "No opinion".

Care-seeking behaviour was assessed by the question "Have you sought care when needed in the past three months?" with the alternative answers "Yes" and "No".

Statistics

Prevalences (%) stratified by sex of self-rated health, socio-economic, horizontal and vertical trust, and care-seeking behaviour variables were calculated (table 1). Crude odds ratios and 95% confidence intervals (OR, 95%) were also calculated in order to analyse associations between socio-economic, generalized (horizontal) and institutional (vertical) trust, and care-seeking behaviour variables and poor self-rated health (table 2). We conducted multivariate analyses using a logistic regression model to assess the potential

importance of various confounders (age, country of origin, education, economic stress, horizontal trust and care-seeking behaviour) on the relationship between institutional trust in the health care system and poor self-rated health (table 3). The effect of different variables on the association between care seeking behaviour and the odds ratio of poor self-rated health was explored by logistic regression analysis (table 4). All data were analysed with the SPSS statistical software package (Norusis, 2000).

Results

The demographic characteristics of the sample population are summarized in table 1. The distribution of self-rated health, socio-economic, horizontal and vertical trust variables was almost similar between men and women. A 28.7% proportion of the men and 33.0% of the women rated their health as poor. Almost 12% of the respondents were born in other countries than Sweden. The prevalence of high education was 32.5% among men and 38.9% among women. The proportion with 9 years of education or less was somewhat higher among men than among women (43.5% compared to 37.3%). Most of the respondents had never (74.1%) or only occasionally (17.7%) experienced economic stress during the past year. The prevalence of low generalised trust in other people was 40.7% among men and 44.3% among women. A majority of the respondents had very high or rather high trust in the health care system (73.3%). The prevalence of "not high" and "no trust at all" in the health care system was 22.6% and 2.5% among all the respondents, respectively. Overall 18.0% of respondents had not sought care when needed. Almost one in five women had not sought care when needed.

Table 2 shows that the likelihood of poor self-rated health was higher for both men and women born in other countries than Sweden, with higher age, economic stress, low/medium education, lower horizontal trust, lower trust in the health care system, and those who had not sought care when needed during the past three months.

Table 3 shows that the odds ratios of poor self-rated health significantly differed for the "rather high trust", "not high trust" and "no trust at all" categories of the institutional trust in the health care system variable compared to the "very high trust" reference category among both men and women. The odds ratios for the "no trust at all" category were 3.1 (2.4-4.0) and 4.6 (3.6-5.9) for men and women, respectively. The odds ratios were considerably reduced after the inclusion of age, country of origin, education, economic stress and horizontal trust in the models, reducing the odds ratios of the "no trust at all" category to 2.5 (1.9-3.3) and 3.7 (2.8-5.0) for men and women, respectively. The inclusion of the care-seeking behaviour variable in the models further decreased the odds ratios to 1.9 (1.5-2.6) and 2.6 (1.9-3.6) for men and women, respectively.

Table 4 shows that the care-seeking behaviour variable "not sought medical care when needed" remained significantly associated with poor self-rated health throughout the analyses successively including confounders and institutional trust in the health care system in the models.

Discussion

This study is one of the first to study the relationship between institutional trust in the health care system, care-seeking behaviour and self-rated health. The results of this study indicate that individuals with low institutional trust in the health care system to a significantly higher

extent have poor self-perceived health. The interpretation could be that the level of institutional (vertical) trust affects (self-rated) health. This association may be partly mediated by care-seeking behaviour. A person's trust in the health care system can strongly affect health by at least two different causal mechanisms. One plausible mechanism may be psychosocial. It is plausibly generally more beneficial for a person's health, both psychological and physical health, to have trust than not to have trust. A second, probably much stronger, mechanism by which vertical trust in the health care system affects health concerns the access to health care and amenities. If a person has trust in the health care system that person is more likely to seek help and receive adequate treatment. This may for instance affect the probability of avoiding cardiovascular (CVD) incidence (e.g. acute myocardial infarction and stroke) among people with asymptomatic hypertension or deranged blood cholesterol and plasma lipid levels without any previous CVD incident or symptoms. Trust in the health care system may also, in a similar way, affect the propensity of a post-myocardial infarction patient to follow prescribed medication/treatment and to return to the health care system for check-ups in order to prevent future CVD events. Both these plausible causal mechanisms have previously been hypothesised by Kawachi et al. (Kawachi, Kennedy & Glass, 1999). Care seeking behaviour may be the intermediate step in particularly the second mechanism. Persistence over time in either institutional trust or lack of institutional trust is a precondition for the social capital trust factor to be a determinant of self-rated health. The literature on the persistence over time in trust or lack of trust in the health care system is very scarce. A recent study found that trust in an insurer was more likely to change over time than trust in one's own primary health care physician, which was stable over time (Balkrishnan, Hall, Blackwelder & Bradley, **2004).** Furthermore, other trust variables such as horizontal trust (generalised trust in other people) and institutional trust in

politicians and the political system have been shown to be very persistent over time (Putnam, 2000; Holmberg, 1999).

The group with low vertical trust in the health care system had a higher risk of reporting poor health status. One third of all respondents (31.4% of men and 35.3% of women) with lack of/low trust in the health care system rated their health as poor. The inclusion of care-seeking behaviour in the multivariate logistic regression model had a decreasing effect on the vertical trust differences in poor self-rated health. This result supports the idea that insufficient access to health care might be an important mediating link in the association between trust in the health care system and self-rated health.

Consistent with previous reports, self-rated poor health was associated with higher age, low educational attainment, low socio-economic status (Kawachi, Kennedy, & Glass, 1999; Franks, Gold, & Fiscella, 2003), and low trust (Kawachi, Kennedy, & Glass, 1999; Lindström, 2004; Lindström, Moghaddassi, & Merlo, 2004). A previous investigation has shown that higher levels of generalized trust in other people have protective effects on health. Generalized trust was for instance associated with better self-rated health, more satisfaction and longer survival (Barefoot, Maynard, Beckham, Brummett, Hooker, & Siegler, 1998).

While one US study on trust in the medical profession failed to find any relationship between trust and demographic characteristics and socio-economic factors (Hall, Camacho, Dugan, & Balkrishnan, 2003), another US study concluded that demographic characteristics and socio-economic factors influence access to care for chronic pain (Nguyen, Ugarte, Fuller, Haas, & Portenoy, 2005).

The prevalences of "very high" and "rather high" trust in the health care system are 15.1% and 58.3% in the total population, respectively. There seems to be a very high potential of institutional trust in the health care system in the general population in Scania in southern Sweden. A recent US study found that lack of trust in the health care system was significantly associated with self rated-health (Armstrong et al., 2006). To our knowledge there are no other studies concerning this topic.

The results of this study demonstrate a significant association between lack of trust/low trust in the health care system and poor self-rated health, even after adjustments in the multivariate logistic regression analysis model for horizontal and vertical trust, and access to health care services. Inappropriate networks and relationships between patients and providers produce low trust in the health care system. A low level of trust in the health care system presumably causes low level of access to health care, and delays in seeking health care until the health conditions deteriorate. Patients' behaviours may cause inappropriate patterns of service use such as non-uptake of preventive services, delay in the uptake of services for conditions requiring treatment, and inappropriate demands on emergencies (National Co-ordinating Centre for NHS Service, 2001). Poor health status also increases the propensity to use health care services, considering constant all other factors, a fact which was taken into consideration by including the access variable in the final multivariate models.

Good interactions between patients and providers are of importance as a prerequisite of effective health care. Trust and communication skills are considered as the main reason for patients' willingness to seek health care (Hall, Dugan, Zheng, & Mishra, 2001; Gilson, 2003, Russell, 2005), encouraging individuals to use services (Gilson, 2003; Russell, 2005), staying with a practice (Junod Perron, Favrat, & Vannotti, 2004), and are closely related to

patient satisfaction and adherence to treatment (Birkel & Reppucci, 1983; Hall, Dugan, Zheng, & Mishra, 2001; Lindström & Axén, 2004). This study has found that even in a country such as Sweden, with universal access to health-care, poor trust in the health care system is significantly associated with poor self-rated health. Future research should focus on identifying the direction of this effect, and finding out what other factors modify this relationship.

Access to health care is the ability to obtain health services when needed. Access to health care is a multi-faceted concept, which entails the relationship between need, provision and utilization of health services. Access might be defined as some point on the pathway involving the processes of contacting, entry and utilization of effective, appropriate and acceptable services, as well as the attainment of the desired or appropriate outcomes (National Co-ordinating Centre for NHS Service, 2001). However, it may be possible for individuals to have access to health services without utilising them (National Co-ordinating Centre for NHS Service, 2001). Barriers to access can consequently occur at different points on the continuum of contact to utilization of health care services, and depends on financial, organizational (e.g. registration, costs), and social/cultural barriers (e.g. care-seeking behaviour, poor relationship) which limit the utilization of services (National Co-ordinating Centre for NHS Service, 2001). Thus utilization is dependent on the affordability, accessibility and acceptability of services, not only the adequacy of health services (National Co-ordinating Centre for NHS Service, 2001).

Equal access to health care for different segments of the population such as socio-economic, ethnic and geographic subpopulation, is one important objective of the World Health Organization (World Health Organization Europe, 1993). In the international literature socio-demographic and financial issues, individual health and perceived health status,

knowledge, amenability, communicative action and the degree of interconnectedness of social networks, time and place of residence are seen as variables that have **a** major impact on care-seeking behaviour, as well as access to and utilization of health care services (Birkel, & Reppucci, 1983; National Co-ordinating Centre for NHS Service, 2001; Sinay, 2002; Thiede, 2005).

Substantial attention has been focused on the availability of services (having access) (Thiede, 2005). Another aspect of access concentrates on the relational factor (gaining access) that may affect people's subjective choice sets or their freedom to utilise health services (Thiede, 2005). Thus, it is meaningful to consider access in terms of whether those who need care get into the system or not, while the services are provided. The patients' decisions to seek medical care comprise the first step in the process of accessing services.

Strengths and limitations

The participation rate of 59% may be regarded as acceptable. The study population shows similar composition according to sociodemographic variables compared to the general composition of the population of Scania when compared with statistical registers. However, the group born in other countries than Sweden is under-represented by approximately 4 per cent units in this study compared to official register statistics for Scania. Still, the risk of selection bias was considered low in a previous study on a random sample conducted with approximately the same sampling design and the same participation rate (59%) in Scania 2000 (Carlsson, Merlo, Lindström, Östergren, & Lithman, 2006).

The reliability (Lundberg, & Manderbacka, 1996) and validity (Franks, Gold, & Fiscella, 2003) of self-rated health has been demonstrated in previous studies comparing other alternative health measures. Poor self-rated health has been shown to predict incidence of acute myocardial infarction in southern Sweden (Ali et al., 2006). The trust items (horizontal and vertical) are self-reported items, which are impossible to validate. However, the items used in this study have been used in previous nationwide investigations in countries such as the USA (Putnam, 1993) and Sweden (Rothstein, 2003). Furthermore, low social capital (low trust and low social participation) has been demonstrated in a previous prospective study linking the 2000 public health questionnaire in Scania to prospective register data on acute myocardial infarction incidence to be associated with an increased risk of acute myocardial infarction (Ali et al., 2006). The question "Have you sought medical care when needed in the past three months?" was interpreted to be an expression of access. This item identified access patterns, with respect to care-seeking behaviour. In the survey instrument (questionnaire) used (the 2004 public health survey) this question is the only opportunity to explore accessibility. This question has previously been used to measure access to health care services (Balabanova, McKee, Pomerleau, Rose, & Haerpfer, 2004; Nguyen, Ugarte, Fuller, Haas, & Portenoy, 2005). It is of course still possible that this item may incur some recall bias, a form of misclassification, which might have been introduced by asking respondents about their care-seeking behaviour during the preceding 3-month period.

Age, sex, country of origin, education and horizontal trust might be confounders of the association between the institutional trust, care-seeking and self-rated health variables. Adjusting for these potential confounders and stratifying for sex produced substantial change in the effect size associated with trust in the health care system and self-rated health.

The cross-sectional study design makes it impossible to draw inferences about direction of causality and causal pathways. However, it is probably not a serious weakness in this study, because the relationship between trust in the health care system and self-rated health is a matter which should be seriously considered regardless of direction of causality. The most likely direction of causality would plausibly be from trust in the health care system to self-rated health with health seeking behaviour as an intermediate step in the chain of causality. However, this cross-sectional study should most importantly be regarded as an exploratory study of the association between institutional trust in the health care system and self-rated health, not as an analytical study inferring conclusions concerning a specific direction of causality. A reverse direction of causality, in the direction from poor health to bad experiences of contacts with the health care system, is also possible.

Conclusion

Low trust in the health care system is associated with poor self-rated health. This association may be partly mediated by not seeking health care when needed. However, this is a cross-sectional exploratory study and the causality may go in both directions.

Aknowledgements

This study was supported by grants from the ALF Government Grant dnr M:B 19 1003/2004, Sweden.

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Table 1- Prevalences (%) of the self-rated health (continuous and dichotomous), demographic, socioeconomic, economic stress, horizontal and vertical trust, and care-seeking behaviour variables. N=27,963.

	Men (N=12,720)	Women (N=15,243)	Total (N=27,963)
Self-rated health			
Very good	22.1	19.7	20.8
Good	49.2	47.1	48.0
Neither good nor poor	22.9	25.6	24.4
Poor	4.8	6.3	5.6
Very poor	1.0	1.3	1.2
(Missing)	(277)	(424)	(701)
Self-rated health (dichotomous)			
Good	71.3	66.8	68.8
Poor	28.7	33.2	31.2
(Missing)	(277)	(424)	(701)
Age			
18-34	23.1	25.7	24.5
35-44	17.7	18.3	18.0
45-54	18.2	17.7	17.9
55-64	20.6	19.1	19.8
65-80	20.4	19.2	19.8
(Missing)	(0)	(0)	(0)
Country of origin			
Sweden	88.5	88.0	88.2
Other countries	11.5	12.0	11.8
(Missing)	(667)	(586)	(1253)
Education			
13- years	32.5	38.9	36.0
10-12 years	24.0	23.7	24.0
-9 years	43.5	37.3	40.0
(Missing)	(1192)	(1701)	(2893)
Economic stress			
Never	75.9	72.5	74.1
Occasionally	16.9	18.4	17.7
6months a year	3.4	4.4	3.9
Every month	3.8	4.7	4.3
(Missing)	(265)	(331)	(596)
Trust (horizontal)			
High	59.3	55.7	57.4
Low	40.7	44.3	42.6
(Missing)	(182)	(263)	(445)
Trust (vertical) in the health care system			
Very high trust	17.0	13.4	15.0
Rather high trust	58.0	59.3	58.3
Not high	21.1	24.0	22.6
No trust at all	2.8	2.2	2.5
No opinion	1.2	1.1	1.1
(Missing)	(508)	(511)	(1019)
Not sought medical care when needed (during the past three months)			
No	83.3	80.9	82.0
Yes	16.7	19.1	18.0
(Missing)	(810)	(949)	(1759)

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Table 2- Prevalences (%) and odds ratios (OR) with 95% confidence intervals (95% CI) of poor self-rated health, according to socioeconomic, economic stress, horizontal and vertical trust, and care-seeking behaviour variables. N (men) =12,720 and N (women) =15,243.

	Men		Women	
	%	**OR (95% CI)**	**%**	**OR (95% CI)**
Age				
18-34	16.7	1.0	22.0	1.0
35-44	22.5	1.4(1.3-1.7)	26.6	1.3(1.1-1.4)
45-54	29.0	2.0(1.8-2.3)	32.8	1.7(1.6-1.9)
55-64	35.0	2.7(2.4-3.1)	42.1	2.6(2.3-2.9)
65-80	40.8	3.4(3.0-3.9)	46.3	3.1(2.8-3.4)
(Missing)	(277)		(424)	
Country of origin				
Sweden	27.7	1.0	31.9	1.0
Other countries	35.7	1.3(1.2-1.5)	40.8	1.5(1.3-1.6)
(Missing)	(927)		(989)	
Education				
13- years	18.7	1.0	22.4	1.0
10-12 years	24.8	1.4(1.3-1.6)	31.1	1.6(1.4-1.7)
-9 years	37.0	2.5(2.3-2.8)	43.1	2.6(2.4-2.9)
(Missing)	(1419)		(2064)	
Economic stress				
Never	25.7	1.0	30.2	1.0
Occasionally	33.8	1.5 (1.3-1.7)	35.1	1.3 (1.1-1.4)
6 months a year	45.1	2.4 (2.0-2.9)	43.6	1.8 (1.5-2.1)
Every month	49.3	2.8 (2.4-3.4)	55.9	2.9 (2.5-3.4)
(Missing)	(523)		(734)	
Trust (horizontal)				
High	23.6	1.0	27.3	1.0
Low	35.9	1.8(1.7-2.0)	40.2	1.8(1.7-1.9)
(Missing)	(450)		(665)	
Trust (vertical) in the health care system				
Very high trust	25.5	1.0	29.4	1.0
Rather high trust	26.4	1.0(0.9-1.2)	29.3	1.0(0.9-1.1)
Not high	35.2	1.6(1.4-1.8)	41.7	1.7(1.5-1.9)
No trust at all	45.7	2.5(1.9-3.1)	59.9	3.6(2.8-4.6)
No opinion	27.5	1.1(0.8-1.6)	33.3	1.2(0.9-1.7)
(Missing)	(779)		(919)	
Not sought medical care when needed (during the past three months)				
No	22.6	1.0	26.1	1.0
Yes	55.7	4.6(3.9-5.4)	58.6	4.5(4.0-5.2)
(Missing)	(1062)		(1326)	

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Table 3- Crude and multivariate odds ratios with 95% confidence intervals (OR:s, 95% CI:s) of vertical trust in relation to poor self-rated health.

Men			
Institutional trust in health care system	**OR (95% CI) ***	**OR (95% CI)** §	**OR (95% CI) #**
Very high trust	1.0	1.0	1.0
Rather high trust	1.1(1.0-1.3)	1.2(1.0-1.3)	1.1(0.9-1.2)
Not high	1.8(1.6-2.1)	1.6(1.4-1.8)	1.4(1.2-1.6)
No trust at all	3.1(2.4-4.0)	2.5(1.9-3.3)	1.9(1.5-2.6)
No opinion	1.2(0.8-1.8)	0.9(0.6-1.5)	0.9(0.6-1.6)
Women			
Institutional trust in the health care system	**OR (95% CI) ***	**OR (95% CI)** §	**OR (95% CI) #**
Very high trust	1.0	1.0	1.0
Rather high trust	1.1(1.0-1.2)	1.2(1.0-1.3)	1.1(1.1-1.3)
Not high	2.0(1.8-2.3)	1.8(1.6-2.1)	1.5(1.3-1.8)
No trust at all	4.6(3.6-5.9)	3.7(2.8-5.0)	2.6(1.9-3.6)
No opinion	1.1(0.8-1.6)	0.9(0.6-1.4)	0.9(0.6-1.5)

* Adjusted for age.
§ Adjusted for age, country of origin, education, economic stress and horizontal trust.
# Adjusted for age, country of origin, education, economic stress, horizontal trust, and care-seeking behaviour.
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Table 4- Logistic regression analysis of association between care-seeking behaviour and the odds ratio of poor self-rated health presented as crude odds ratio (OR), adjusted OR and confidence intervals (95% CI).

Men	**Crude OR**	**Model I**	**Model II**	**Model III**	**Model IV**	**Model V**	**Model VI**
Care-seeking behaviour †	4.6(3.9-5.4)	4.9(4.1-5.7)	4.6(3.9-5.4)	4.4(3.7-5.3)	3.8(3.1-4.5)	3.6(3.0-4.4)	3.4(2.8-4.2)
Age ☼		1.2(1.1-1.3)	1.2(1.1-1.3)	1.2(1.1-1.3)	1.3(1.2-1.3)	1.3(1.2-1.3)	1.3(1.2-1.4)
Country of origin ¶			1.9(1.5-2.3)	2.0(1.6-2.5)	1.8(1.5-2.3)	1.4(1.4-2.2)	1.7(1.3-2.1)
Education۞				1.5(1.3-1.7)	1.5(1.3-1.7)	1.4(1.3-1.6)	1.4(1.2-1.6)
Economic stress ¤					1.5(1.4-1.6)	1.5(1.4-1.6)	1.5(1.4-1.6)
Horizontal trust 🏛						1.5(1.4-1.6)	1.5(1.4-1.7)
Vertical trust §							1.4(1.2-1.5)
Women	**Crude OR**	**Model I**	**Model II**	**Model III**	**Model IV**	**Model V**	**Model VI**
Care-seeking behaviour †	4.5(4.0-5.2)	4.8(4.2-5.5)	4.5(4.0-5.2)	4.4(3.8-5.1)	3.8(3.3-4.4)	3.6(3.1-4.2)	3.4(2.9-4.0)
Age ☼		1.2(1.2-1.3)	1.3(1.2-1.3)	1.2(1.1-1.3)	1.3(1.2-1.4)	1.3(1.3-1.4)	1.3(1.3-1.4)
Country of origin ¶			2.1(1.8-2.5)	2.1(1.8-2.5)	2.0(1.6-2.4)	1.9(1.6-2.3)	1.8(1.5-2.1)
Education۞				1.4(1.3-1.6)	1.4(1.3-1.5)	1.4(1.2-1.5)	1.4(1.2-1.5)
Economic stress ¤					1.5(1.4-1.6)	1.4(1.3-1.5)	1.4(1.3-1.5)
Horizontal trust 🏛						1.5(1.4-1.7)	1.5(1.3-1.6)
Vertical trust §							1.4(1.2-1.5)

†Yes v.s No, ☼ Five groups, ¶ Born in other country than Sweden,۞ Three groups, ¤ Four categories, 🏛 High vs. low, § Five groups.
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