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Health and Healthcare Utilization Among Swedish Single Parent Families

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Abstract

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One of the most vulnerable groups in Swedish society today is single parent families, a group that has increased over the last thirty years in proportion to married and cohabiting parents. The aims of this thesis are to study inequality and inequity in health and health care utilization with regard to whether parents are single or couple (married/cohabiting), to investigate whether the concept of social capital may provide us with further understanding when analyzing inequality and inequity in health and to investigate how the mental health of single parent children may differ from couple parent children and to what extent this difference may be due to parental socio-economic and socio-demographic characteristics, including social capital. The results from the papers on which this thesis is based indicate that both single mothers and single fathers have poorer health than couple mothers and fathers. Single mothers also refrain from seeking medical care to a greater extent. The financial advantage of single fathers, in comparison with single mothers, might have an impact on their medical care utilization, since they seemingly seek and consume health care to an extent that matches their poorer health. Social capital has as robust an association with self-rated health as any traditional social determinant of health. Four parental characteristics were found to be independently associated with children's mental health; being a single parent, 'poor parental health', limited social support and low levels of social capital. The uneven distribution of all investigated determinants of health, including social capital, gives us reason to conclude that our findings indeed raise concerns about equity. Action taken by society to enable single parents to increase their social capital might improve their and their children's health. It may also be clearly stated that financial status has a major impact on both health and health care utilization. This particular characteristic is also rather accessible to alteration, for example through financial transfers between groups in society.

Keywords: inequity, single parent, children, health, health care utilization, social capital

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To my family

Omslagsbilden används med vänligt tillstånd av Gunilla Bergström ©

List of papers

- 1) Westin M, Åhs A, Persson KB and Westerling R. A large proportion of Swedish citizens refrain from seeking medical care – lack of confidence in the medical services a plausible explanation? *Health Policy* 2004;68:333-344.
- 2) Westin M, Westerling R. Health and healthcare utilization in single mothers and single fathers in Sweden. *Scand J Public Health* 2006;34(2):182-9.
- 3) Westin M, Westerling R. Social capital and inequality in health between single and couple parents in Sweden. (accepted for publication, *Scand J Public Health*)
- 4) Westin M, Sundelin C and Westerling R. Single parent characteristics and children's mental health. (submitted)

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Abbreviations and general definitions

Couple parent	Parent living with a partner, irrespective of they are married or cohabiting
OR	Odds ratio
PQ I, II	Postal questionnaire I and II
Reconstituted families	Couple parent families with at least one non-common child
SDQ	Strengths and Difficulties Questionnaire
SES	Socio-economic status
Single parent	Parent living without any partner
SRH	Self-rated health
TPR	Total Population Register
WHO	World Health Organization

1. Introduction

Although substantial research had been done over the years with regard to inequality and inequity in health and health care utilization, the publication of the Black Report in the early 1980's came to represent a new starting point. With the Black Report a robust scientific examination of health and health care inequities and inequalities was initiated (1). Socio-demographic and socio-economic factors were shown to determine health and health care utilization and possible pathways were investigated to understand the underlying mechanisms. Theories were proposed and interventions were introduced in order to diminish these inequalities and inequities.

In Sweden, equitable health care and health care utilization are and have long been the goals of national health care politics. The objective of "good health and health care on equal terms for the entire population" is also explicitly stated in law (2). "On equal terms for the entire population" implies that health care utilization is to be determined only by need. All other factors, such as class, ethnicity, sex, education, and income should be irrelevant with respect to the amount and quality of care that is provided (3, 4). Several studies have shown, however, that health and health care utilization in Sweden are linked to certain socio-economic variables, such as private economy (5, 6), level of education (7) and origin of birth (8, 9).

One of the most vulnerable groups in the Swedish society today is single parent families, a group that has also increased over the last thirty years in proportion to married and cohabiting parents (10). Several studies have found that single mothers are less benefited than both married mothers and cohabiting mothers in terms of health (11-14) and mortality (15). However, little is known about single fathers, and the studies that do exist are not as conclusive as those regarding single mothers. One study shows that single custodial fathers report worse health than their cohabiting counterparts (16) and another study shows that non-custodial fathers had higher mortality risks than custodial fathers and cohabiting custodial fathers (17).

There is of course no reason to assume that health would be more equitably dispersed among children and adolescents than adults. On the contrary, the

health disadvantage that exists for single parents is also found for their offspring, in contrast to children with two parents (18, 19). It is estimated that approximately five to ten percent of children in Sweden suffer from psychiatric problems and that roughly 15 percent of children and adolescents have contact with a child/adolescent psychiatry clinic at least once during their upbringing (20). Much research with regard to children's mental health has focused on the effect brought on by parental divorce. However, research is not conclusive with regard to how children's mental health is associated with parental divorce, if problems are acute but time-limited or more enduring (21-23). There are, indeed, several mediating factors known to be correlated with poorer mental health in children, factors that are not seldom concordant with living with a single parent; socio-economic disadvantages (poverty) (24, 25), parental health (26) and parental social support (27).

Increasingly in recent years, researchers have gained interest in social capital as yet another possible mechanism to explain how health is distributed between communities and/or between individuals. Unfortunately, the concept of social capital is not particularly well defined. However, one theoretical mainstream has emerged, stemming from the definition that Putnam developed and applied in his research in political science. According to Putnam's definition, two of the essential cornerstones of social capital are trust and participation in civic and social activities (28). In this sense, social capital is by many scholars regarded as a contextual concept, a notion that explains consequences of certain social environments. However, divergences in social capital on an individual level are by no means uninteresting with respect to social and health inequalities. For instance, studies have found a clear interaction between individual trust and collective notions of trust (29) and multilevel analysis indicates that social capital, measured as trust and participation, can be positively associated with health both as a collective and an individual resource (30). Results have diverged when social capital and health have been investigated at the individual level; some find associations while others do not (31-34). Social capital, measured as trust and participation, may then be an individual resource without refuting that social capital on an ecological level is more than an aggregation of individual characteristics. To our knowledge, no previous study has examined possible associations between social capital and health with regard to single and couple parents.

Sweden is recognized as a country with a rather high level of relative income equality, with social mobility across generations, comprehensive state-supported child-care and extensive community child health services, properties that have been linked to better population health outcomes (35, 36). However, this does not alter the fact that in Sweden the same differences in health will be found in correlation to social inequality, socio-

economic gradients or social class, as indeed in any developed country (37). In 2003 the Swedish parliament adopted a new public health policy with one overarching national aim and eleven objective domains. The primary aim of the policy is to improve public health and to reduce inequalities in health among different groups of the population. Three of the eleven objective domains are directly related to this thesis: Participation and influence in society; Secure and favourable conditions during childhood and adolescence; and A more health-promoting health service (38).

2. Aims of the thesis

2.1 General aims

The general aim of this thesis is to study inequality and inequity in health and health care utilization with regard to whether parents are single or couple (married/cohabiting). A further aim is to investigate whether the concept of social capital may provide us with further understanding when analyzing inequality and inequity in health. A third aim of this thesis is to investigate how the mental health of single parent children may differ from couple parent children and to what extent this difference may be due to parental socio-economic and socio-demographic characteristics, including social capital.

2.2 Research questions

1. The first study aimed to examine whether different socio-demographic variables were associated with perceived unmet medical needs, i.e. refraining from seeing a doctor despite a perceived need thereof. Furthermore, the study was to examine why it was that people refrained from seeing a doctor and what they did instead.
2. In the second paper the aim was to analyse self-rated health and health care utilization with regard to whether the respondents were single or couple parents. An additional aim was to examine if there were any similarities or differences between single fathers and single mothers with regard to health and health care utilization when compared to their couple counterparts.
3. The aim of the third study was to analyse if social capital is associated with self-rated health among parents and to determine whether the distribution of social capital is skewed between single and couple parents. Also, a second purpose of the study was to investigate if the existing inequalities in health between single and couple parents could be better explained by introducing social capital as yet another possible mechanism by which health is distributed.

4. The fourth study aimed to investigate probable associations between child and adolescent mental health and family structures. Furthermore, it aimed to investigate to what extent such an association may be influenced by other parental characteristics, such as parental socio-economy and socio-demography, social support, social capital and parental health.

3. The concept of equity in health and health care

“By a good distribution, not an equal but an equitable distribution must be understood.”

*Victor Hugo; Les Misérables
(Volume IV, Book I, Chapter IV)*

In textbooks and articles concerning equality and equity in health and health care there seems to be an imperative assumption; that inequality and inequity in health and health care are unacceptable. Even so, the inclination seems to be to discuss equity in health care rather than in health itself (39). Health appears not to be an appropriate focal variable for assessing social justice. This reluctance to focus on health is common between egalitarians, utilitarians and communitarians alike (39). John Rawls states that “health and vigor, intelligence and imagination, are natural goods”; meaning that health is not to be included in those social primary goods that are to be distributed “equally unless an unequal distribution of any, or all, of these values is to everyone’s disadvantage” (40). Social justice is a colossal subject area and equity in health and health care are often recurring themes. Unfortunately, definitions are plentiful.

It is first important to stress that equity is not synonymous with equality. Equality is an empirical concept, whereas equity is normative (41, 42). Equity statements are statements of value; equality statements are statements of fact (43). To assess equality one might use reliable empirical instruments and evaluate whether equality exists between different groups. The concept of equity is derived from ethics and is based on the ethical principal of distributive justice (44, 45). Equity in health has widely been defined as “the absence of socially unjust or unfair health disparities”(46). Since social justice and fairness can be interpreted differently by different people, Braveman and Gruskin have elaborated this definition of equity in health into: “absence of systematic disparities in health (or in the major social determinants of health) between social groups who have different levels of underlying social advantage/disadvantage – that is, different positions in a social hierarchy” (41).

According to one definition equity in health care can be said to be obtained if illness is the major determinant of the allocation of resources (47). Krasnik further develops this definition, stating that an equitable distribution of health care is one in which the amount of health care received correlates closely with indicators of need and is independent of variables such as income, which are irrelevant to need (48). Culyer and Wagstaff explore four definitions of equity in health care: equality of utilization, distribution according to need, equality of access and equality of health, finding them mutually incompatible (49). They propose a definition that states that “equitable distribution of health care is simply one which gives rise to an equal distribution of health” (49).

Needs assessment

When discussing equity in health and health care utilization it is common to separate equity into horizontal and vertical equity (the same reasoning is applicable for need) (49). Horizontal equity states that equal health care should be accessible for equal needs. The vertical definition states that people with greater needs should be able to obtain more health care. Both these definitions of equitable health care are, according to Swedish legislation, meant to be met within Swedish health and medical care (2, 4).

Since need is a crucial aspect, among several others, when discussing equity in health and health care utilization it is not at all surprising to find that it has been a subject of keen attention and that it fails to be clearly defined. One major difficulty lies in the fact that the word “need” has two different meanings, one normative and one technical. Health needs assessment is a structural and systematic method of identifying unmet health and health care needs and making changes to meet these unmet needs (50). Need may then be defined as the ability to benefit from health care, which in turn stipulates that there is both morbidity and effective treatment available (51). This in turn means that morbidity and a possible medical treatment must be ascertained by “someone”. There is an ongoing debate if this “someone” always must be a professional, and if the professional’s assessment should be balanced (or negotiated) with the individual’s perceptions of need (52), the latter being in concordance with Swedish legislation (4). However this negotiation can only take place if the individual with the perceived need seeks health care and thus expresses a need, which often never happens (53, 54).

4. Single parent families

Family derives from the Latin word *familia* (household), which in turn stems from *famula* (servant) (55). Until the 18th century this notion was used primarily among noblemen and typically characterized the whole household, servants included. In wealthier circles the construct then slowly became synonymous with a smaller group of kinship. In the middle of the 19th century the term family starts to be used frequently in press and periodicals, referring here to a father, mother and their children.

Children and their parents constitute what is commonly labelled as a family. There are several definitions on family as a concept. A common expression is the nuclear family, where all children in a household have and live with their mutual parents, who in turn may be married or cohabiting (the term couple parent will be used when parents are either married or cohabiting). A wider interpretation of the concept of family regards kinships and people living together without kinsmanship. Cohabiting in a sense that two partners are living together as husband and wife without being married became more common in Sweden in the mid 1960s. Even though cohabiting was regarded as a big city-phenomenon, the tradition actually started in northern Sweden in the 1950s. It became more and more popular at the end of the 1960s and early 1970s and in order to get an accurate estimation on the family situation in the 1975 national census people were for the first time asked whether they were cohabiting (56).

As cohabiting grew more popular less people got married and more people got divorced. Of all couples that were joined by marriage in 1955, 8 percent were divorced after ten years. That contrasts to those who got married in 1985, of which 23 percent were divorced ten years later. "Divorce" or "breaking up" is more common among couples that are cohabiting, even couples that have children. In 1997, 27 out of 1 000 couples with children were separated. Among those that were married with children 21 out of 1 000 separated and among those that were cohabiting and had mutual children 48 out of 1 000 couples separated. If we look at these numbers from a child perspective, we see that 25 percent of all 16-17 years old children have parents that have separated (1999). This can be contrasted to the

periods 1976-1985 and 1966-1975 when the shares of 16-17 year olds whose parents were divorced were 15 and 9 percent, respectively (56),

The most common family constellation in Sweden is still and without doubt the traditional nuclear family, where all children in a household have and live with their mutual parents, who in turn may be married or cohabiting. The nuclear family constitutes approximately 68 percent of all families with children up to 17 years of age still living at home. Another 7 percent comprises reconstituted families, implying that the children are living with either their biological mother or father and that parent's new partner, who in turn may or may not have a child of their own. Single parents constitute approximately 25 percent of all family constellations, of which single mothers represent 81 percent (Table I) (57). The number of single parent households has increased slowly over the years and has almost doubled, from 160 000 to 270 000, since 1980. There is, however, a weakness in these statistics, which come from Statistics Sweden using data from TPR, the Total Population Register. Within these registers cohabiting parents without common children, but with children of their own, will be falsely registered as single parents. Calculations have been made that this faulty registration leads to an overestimation of single parents by approximately 45 000 (58).

Table I. Families with children between the ages of 0-17 still living at home and number of children according to family constellation, 2004 (families), 2002 (children). Source: SCB

Family constellation	Families		Children	
	N	%	N	%
Couple parents				
Nuclear families	736 019	68	1 433 000	74
Reconstituted families	75 460	7	97 000	5
Total couple parent families	813 485	75	1 530 000	79
Single parents				
Single mothers	220 528	20	354 000	18
Single fathers	50 395	5	66 000	3
Total single parent families	270 923	25	420 000	21
Total all families/children	1 084 408	100	1 936 000	100

Family constellation differs with regard to level of education. Among mothers with only nine-years of compulsory school, almost one-third are single, to be compared with 16 percent among mothers with a university education. Parents with a low level of education also live proportionally more often in reconstituted families than do parents with a high level of education (59). Fathers with a high level of education live with their children to a greater extent than fathers with a low level of education. This mirrors the fact that less educated fathers tend to have a higher separation ratio and also get joint custody to a lesser extent than more educated fathers (60).

In Sweden changes in legislation have made joint custody compulsory, if the parents were married or cohabiting (and fatherhood was established if cohabiting) at the time of the child's birth, unless one parent is clearly unable to function as a legal guardian (or if both parents agree that only one of them should have custody of the child) (61, 62). Together with previous changes in legislation in the early 1990s that simplified the process for nonwed fathers to obtain joint custody, this has led to an increase in single fathers who have sole or, much more commonly, joint custody of children after separation from the child's mother (60). Further, there is a trend in society for children whose parents are separated to spend time with their fathers (59).

In Sweden, single mothers have long been recognized as a particularly vulnerable group in society with regard to financial presuppositions (63) and they have also been and still are the subject of directed governmental family policy (63, 64). However, from an international perspective the single mothers in Sweden are rather well-situated. The Swedish welfare policy traditionally emphasizes the "work policy", i.e. all inhabitants, men as well as women, mothers as well as non-mothers, are to support themselves by working (65). Gähler addresses three particular reasons for why Swedish women participate in the working life to such a great extent: income tax reform in 1970 in which individuals instead of households became the basic unit of direct taxation thus creating an incentive for women to join the work force; the extensive public sector; and extensive public child care (66). A compilation of the shares of single parents that work is shown in table II, illustrating that Swedish single parents work to a much greater extent than some of our developed European neighbours, which in turn results in a relatively better financial situation.

Table II. Proportion of parents that are single (% by children) in Western societies, and shares of single parents that work (%), international comparisons. Source: OECD, Eurostat, SCB

Country	Single parent %	Single parent working %
Sweden	21	86
Norway	16	57
Denmark	16	73
Finland	10	78
United Kingdom	24	--
France	14	68
Germany	16	60
EU-25	13	--
United States	17	71
Canada	13	61

Gähler has in a meritoriously stringent manner shown why single mothers are particularly exposed to financial hardship (66), emanating from the findings of Sørensen; “The poor economic position of single-mother households is a result of three factors: women's generally lower wages, lower economic support from men, and a relatively great need for income.”(67). Firstly, women make less money than men, which in turn is due to two main reasons: women (and mothers in particular) work part-time to a much greater extent than do men, and even when women do work full-time, they earn less money than men. Secondly, lower economic support from men reflects the fact that a two parent household has certain financial advantages insofar as the couple can share expenses. And, thirdly, a relatively great need for income which reflects the fact that it is the mothers that carry the primary responsibility for their children’s sustenance. In the 1990s these three explanatory factors were further manifested. During the recession in the Swedish economy in the 1990s, single mothers had a substantially worse development in terms of financial hardship than couple mothers and did not benefit proportionally from the upswing that occurred at the end of the decade. The main reasons for this are that single mothers to a greater extent became un-employed or part-time employed and that they received lesser financial transferrals (66).

5. Determinants of health

5.1 Health

Measuring health is somewhat difficult. First of all – what is health? The mostly used definition of health is the one given by WHO: “Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity” (68). The WHO discriminates between absence of disease, which is to be judged by a professional, and positive health, which is to be judged by the person in question. Even though this definition has been criticized for being unrealistic and unattainable, it also widened the view on health. It made room for a subjective interpretation of health – beyond physical and mental dysfunctions and disabilities – one’s own perception of health. A subjective perspective of health has additionally had implications on the importance of psycho-social aspects being included in health promoting interventions. This was stressed in 1986 at the WHO conference in Ottawa, where health services were to be more focused towards health than disease. Furthermore, a subjective perspective on health has had implications on health needs assessment (see chapter 3.1). The downside of a subjective perspective of health, from a researcher’s point of view, is that health possibly gets more difficult to measure. Hard facts like morbidity, when diagnosed by a trained professional, not to mention mortality, are much more definitive and might be easier to evaluate.

There are several different and valid instruments to measure self-rated health (SRH) – instruments that have been shown to measure health, function and well-being as perceived by the individual that are very well associated with both present and future morbidity as well as mortality (69-71). Furthermore, SRH has also been argued to depict health in line with the definition of health given by the WHO (72). SRH is mostly measured by a single question, varying within three different categories; global non-comparative SRH, global age-comparative SRH and global time-comparative SRH.

5.2 Determinants of health

It is well known that health is associated with socio-economic gradients and social inequality or social class. There are multiple theories on how these associations sustain, what the underlying mechanisms are that make it possible for different social characteristics to be determinants of health on a group level. Environmental effects on health can sometimes be easily recognized; polluted air and water, for instance, impact on people's health, and poverty may force certain individuals to reside in areas where air and water are polluted. Poverty is also one of these social determinants that have been rather convincingly shown to be positively associated to poorer health (73). Strong influences and interferences certainly exist between the different categories. People from less favourable socioeconomic positions are more often exposed to hazardous compounds or environments; a low education level for instance, might lead to jobs that are more often linked with health threatening substances or health threatening situations or no jobs at all. Unemployment, at least for a longer period of time, is known to be harmful for one's health (74). Exposure to hazardous agents may also be a result of detrimental lifestyles, which again are more often found among people at the lower end of a social gradient (75). Thus, both specific and general processes may operate in the creation of health inequalities. And there are more subtle environmental determinants, for instance the concept of trust, which has been convincingly shown to influence health; people are healthier in areas where trust is higher and less healthy where trust is low (29). Trust, together with participation, is also a cornerstone of the concept of social capital (see chapter 6).

So why is it that associations are commonly found between socially differentiated circumstances and health? First, we need to assume that two specific presumptions are valid; that people living in our society can be stratified into classes or positions (76) and that there are specific circumstances, by which members of different socio-economic groups come to experience varying degrees of health (77). Many variations of how to categorize these determinants of health have arisen, the following is but one:

- a) Access to resources
- b) Genetic variations
- c) Circumstances in childhood and as a foetus
- d) Vulnerability and susceptibility
- e) Selection
- f) Socialization

Material deprivation might explain certain differences in health between groups with different socioeconomic status; where lower socioeconomic groups might have poor economy, poor housing, poor nutrition, inadequate access to health care, which might lead to poor health. If access to resources that are considered important in order to obtain and sustain health are unequally dispersed, than there will ultimately be health differences in accordance with this primary inequality. This might also be labelled as absolute (material) deprivation.

Theoretically, genetic variations could explain differences in health between groups with different socio-economic and socio-demographic status; implying that certain genetic variations are more predominant in certain groups. It may be feasible that disease-related genotypes can result in downward social mobility, albeit this effect has been considered to be “marginal”. Mackenbach proposes, however, that the major genetic contribution to social mobility and health status will occur due to “personal attributes that influence social mobility” (78). Such personal attributes – cognitive ability, coping styles, personality etc – will most likely not be the result of a single genetic locus, hence making it very difficult to disentangle phenotypic penetrance from environmental influence and consequently any possible heritability (79).

The Barker Early Origins Hypothesis, also known as the fetal origins hypothesis is founded on the concept that fetal growth restriction - due to nutritional deprivation in early life - is an important cause of some of the most common, costly and disabling medical disorders of adult life including coronary heart disease and the related disorders hypertension, stroke and type 2 diabetes (80, 81). However, there is reason to believe that an initial unfavorable start in life can be modified by more beneficial environmental circumstances later on in life, and vice versa (82). This process may be considered along with the ‘life-cycle perspective’. A life-cycle perspective on health comprises the notion that possible pathogenic and salutogenic factors and processes are accumulated over the whole of a person’s life (19, 83).

Since lower social classes are affected more prevalently with regard to not only a restricted number of diseases, but with a wide range of diseases, a generalized susceptibility-theory has been introduced (84). According to this theory lower social classes are more prone to illness and malady, not entirely due to the fact that they are more frequently subject for hazardous exposure, but through their increased vulnerability. The proposed mechanism is that certain dealings, for instance negative changes in the social milieu and experience of ‘stressful events’, lead to stress-induced morbidity (84), but

the vulnerability may also come from environmentally inherited faulty coping mechanisms (85).

A possible explanation for the association between socioeconomic status and health may be selection or even reverse causation. It goes without saying that any non-healthy individual will have more trouble achieving and reaching a high socioeconomic standing. Neither is it difficult to understand how a person who is struck with ill-health might lose his socioeconomic position. However, even though selection or reverse causation might seem very reasonable it is not the major reason; low socioeconomic status precedes ill-health (86).

An avid discussion has taken place about the mechanisms that maintain inequalities in health. The socialization process has been defined as “a process by which individuals become part of a group, involving processes that progressively confine their behavioural potentialities within an acceptable range and prepare them for the types of roles they will be expected to play later in life” (87). Singh-Manoux and Marmot argue that health-related and psycho-social behaviours are a product of and are embedded in structures of society, and understanding the socialization process makes it more comprehensible how social advantages can be linked to increasing health advantages, despite changes in knowledge about risk factors (88).

The discussion about the socialization process is but one discourse underlining how every social determinant that has been shown to be correlated to health – sex, education level, ethnicity, employment status, income and housing etc – most certainly works within a context. This context may be ‘the society’ or for that matter, the interaction between individuals and their ‘surrounding’ – how much they participate in the society in which they live. Cassel, who may be regarded as the originator of “The susceptibility theory”, did stress the fact that most people with greater susceptibility were people with a marginal status in society, people, who for a large variety of reasons have been deprived of meaningful social contact (84). This might very well be a good depiction for the concept of marginalization or social exclusion. Social exclusion has been defined as being “about the inability of our society to keep all groups and individuals within reach of what we expect as a society. It is about the tendency to push vulnerable and difficult individuals into the least popular places, furthest away from our common aspirations” (89).

5.3 The concept of relative deprivation and the Status Syndrome

A very interesting view towards health differences between socioeconomic groups has its origin in relative deprivation. The 'Wilkinson hypothesis' states that a country's health status is closely related to the inequalities in financial dispersion that exist within that nation (90). This hypothesis has been challenged (91-93), but it has also extended into a theory with more local-level and individual-level focus, with a particular interest in relative deprivation (94). Relative deprivation has been formally defined by Runciman (95) and he distinguishes between two types: egoistic relative deprivation, which is caused by an unfavourable social condition, when compared to other, better off members of a specific group in which he or she is a member; and fraternalistic relative deprivation, which is caused by an unfavourable comparison to other, better off groups.

The definition of relative deprivation has been elaborated and the concept has been used in numerous studies. A major obstacle to proving or investigating this hypothesis about relative deprivation is the identification of relevant reference groups (96). That is, a reference group that generates feelings of relative deprivation in the individual when comparisons with the reference group eventuate negatively. There is a definition of relative deprivation used by Townsend; 'where individuals are deprived when lacking the possibility to have living conditions and being able to participate in different activities, common in the society they live in', that has bearing to a Swedish study on relative deprivation and health (97). In this study, Åberg Yngwe, investigates whether self-rated deprivation is associated with health, both self-rated health and long-standing illness, and finds that it is. The author suggests that by using self-rated deprivation, some of the problems in finding relevant reference groups are solved. Self-rated deprivation uses the individual's own references; assuming that both society and reference groups are internalized by the individual. A possible association between relative income deprivation and health in Sweden has also been tested and found (98).

Relative deprivation may then be of value when considering the seemingly ever existing health differences present when comparing groups with different socioeconomic status. This is namely what Michael Marmot has found; that a social gradient, constituted by nearly any social parameter that has to do with social status is associated with health (99). When studying associations between health and socio-economic status, there is robust evidence that supports the existence of a gradient between objective measures of SES and health (1). These associations are not only found when subjective measures of SES are used; if subjective and objective

measurements of SES are entered simultaneously in a model to further study the association between SES and health, only subjective measurements of SES are associated with health (100). This implies that relative position brings about some type of exposure that in turn may be linked to health. Amartya Sen argues that relative position on the scale of incomes may translate into an absolute position on another scale; the scale of capabilities (101). This means that it is not what you have that is important, but what you can do with what you have.

Another specific problem is of course to unravel possible causal mechanisms between relative position and health; transition from social to biological processes. When individuals compare their status, possessions, and other life circumstances with those of others, they may experience feelings of shame, worthlessness, and envy that have psychobiological effects on health. These comparisons supposedly lead to attempts to alleviate such feelings through overspending, taking on additional employment that threatens health, and adopting health-threatening coping behaviour such as overeating and use of alcohol and tobacco (102). Low social position, as well as low control (an important characteristic of position in the social hierarchy is the individual's level of control) and lack of autonomy, are linked with the two central biological stress pathways; the sympatho-adreno-medullary axis and the hypothalamic-pituitary-adrenal axis (103). Neuro-endocrine stress mechanisms may particularly contribute to social gradients in risk of coronary disease and morbidity associated with reduced immunity (104). The metabolic syndrome of central obesity, glucose intolerance, insulin resistance, lipoprotein disturbances, and reduced fibrinolysis, may be seen as secondary to altered functioning of the hypothalamic-pituitary-adrenocortical axis. Lower ratios of high to low density lipoproteins, central obesity and higher fibrinogen concentrations have been found to be associated with lower social status (104). These psycho-biological and more direct biological responses are altogether transferable to the reasoning about vulnerability and susceptibility in the previous section.

5.4 Single parents' health

Several studies have found that single mothers are less benefited than both married mothers and cohabiting mothers in terms of health (11-13) and mortality (15). It is believed that this inequality largely derives from an uneven distribution of certain socio-demographic and socio-economic characteristics, which in turn are closely associated to both poorer health (105-107) and inadequate health care utilization (5, 9). Marriage and cohabitation may then have a very valuable salutogenic effect, since partnership often brings with it better material resources. Apart from sheer socio-economic advantages, it is also argued that marriage has a protective effect against risky negative health behaviours, vulnerability due to deficient social networks and a lack of social support (108).

In a very interesting study that compared single mothers in Britain and in Sweden, the authors found that the relative difference in health between single and couple mothers were approximately the same in both countries. However, the Swedish single mothers were much better off with regard to socio-economic factors than the British single mothers. Poverty and joblessness account for approximately 50 % of the health disadvantage for British single mothers, whereas they account for only 3 and 13 % of the health disadvantage among Swedish single mothers, respectively (12). The authors argue that single mothers in Sweden suffer from time-poverty, since the Swedish welfare policy traditionally emphasizes the "work policy", single mothers end up working full-time notwithstanding their full responsibility for home and children. This time-poverty would consequently lead to greater psycho-social stress with loss of control (12). Furthermore, when investigating single mothers' health in comparison with couple mothers', it is difficult to adjust for the very circumstance that separates the two; divorce carries with it a process that is believed to have negative health implications (109). However, there is another side to the coin. Studies show that becoming a single partner in fact may improve health (110). Selection may occur with regard to single parents and health such that emotionally unstable and/or physically handicapped women/men have lower probabilities of being married/cohabiting and staying with a partner. In analogy with a general discussion about selection and distribution of health between groups, health differences may be seen as the result of both selection and environmental factors (110).

However, much less is known about single fathers, and existing studies are not as conclusive as those regarding single mothers. Two studies show that single custodial fathers report worse health than their cohabiting counterparts (11, 16) and another study shows that non-custodial fathers had higher

mortality risks than custodial fathers and cohabiting custodial fathers (17). One reason for the paucity of research dealing with single fathers may be that single fathers are much less common than single mothers. However, in the above mentioned studies, paternal custody also meant that the child had to be nationally registered as residing with his/her father. If we were to apply this to Swedish conditions, it would mean that a large majority of single custodial fathers would be ignored, since the child most often resides with the mother even though fathers are granted joint custody, making it more difficult to find these fathers in pertinent registers. That more single fathers are being recognized as custodians and that these fathers also commit themselves to their children to a greater extent offers interesting opportunities to study health implications on behalf of both parents and children. There is evidence that single fathers benefit from spending time with their offspring (111). It has been shown that divorced fathers that live with their child has less risky health behaviours than divorced father that live without their children and divorced childless men (112).

5.5 Children's mental health

All children and adolescents will inevitably at some time during their upbringing have to deal with unpleasant experiences and events. In most cases this will have no crucial impact on their mental health, but in some cases the child (or adolescent) will develop some kind of mental disturbance. The actual determinants of children's mental health are of course in part dependent on the child's constitution (or vulnerability), but also on several environmental factors in the child's surroundings.

Single events or experiences do not often cause any pronounced effect on children's mental health, however, if the child and family are exposed to several risk factors, the probability of poor mental health increases (113). It is particularly serious when any of the care-givers no longer is optimally functional as a parent due to ill health or substance addiction (114). When certain negative incidents or episodes repeatedly occur in families; poor economy, unemployment or domestic conflicts, children's mental health may be more at risk. Other risk factors include divorce, change of home district, weak social networks or living in a neighbourhood where crime rates are high (115).

Family structure in and of itself have not been regarded as necessarily a predictor of child health and development, illustrated by the fact that children living with two biological parents who experience a great deal of conflict may have at least as many problems as children from single parent

families or reconstituted families (116). It has been considered more likely that family structure is a proxy for variables that affect children's well-being, including those family characteristics that can be associated with marital (parental) dissolution; decreased attention, affection and communication. Other variables known to influence child well-being and very likely to be concordant with family structure also reflect the time-poverty and task overload that is experienced by all single parents; socioeconomic disadvantages, poorer parental health and low parental social support (24, 25, 27, 117, 118). Hostile parenting is another factor that has a negative effect on children's mental health, and is linked to single-parent families through psychiatric and social difficulties specific to this family structure (24).

The very process of parental divorce or partnership dissolution and its impact on children's well-being and mental health has been the subject of numerous studies (23). The results from these studies are, however, quite diverse. It may be sensible to divide possible adverse consequences of divorce and dissolution into short-term and long-term effects. Several studies indicate that most children are negatively affected in the short-term (119). The possible long-term consequences are more in dispute and they are not easily disentangled from the effects that living with a single parent in itself brings. There are, however, studies that indicate that most children recover from the possible short-term consequences without any important 'sequelae' (22). There is some evidence to support the notion that long-term consequences might mirror the post-marital relation that exists between the former couple. The impact on children's mental health and well-being might then be enhanced when antagonism continues to exist between the parents, and possibly reduced when either a parental conflict resolves or a mutual interest for the child (children) gives room for a favorable outcome of the divorce (18, 23, 120). Evidence also indicates that there are health outcome differences with regard to behavioral and emotional problems in children depending on whether parents had been married or cohabiting, such that children of cohabiting parents had a greater increase in adjustment problems (121). Furthermore, the age of the child seems to be an important variable when analyzing the health outcome of parental separations; it seems that younger children have greater adjustment problems after a separation than older children or adolescents (120, 121).

6. Social capital

*"What's in a name? That which we call a rose
by any other name would smell as sweet"*

*William Shakespeare; Romeo and Juliet
(Act II, Sc. II)*

It is quite fascinating how the concept of social capital has gained such increasing interest over the last ten years, especially regarding its possible linkage to health. As an example, Macinko and Starfield could only find ten empirical studies on the subject of social capital and health published before 2001 when they wrote their much cited article about social capital and health (122). But in the year 2002 alone 50 papers were published on that same subject (123). Social capital has been found to be associated with self-rated health (33, 34, 124-127), perceptions of well-being (128, 129), increased mental health (130) and mortality (131).

So what is it about this concept that spurs such interest? The initial linkage between social interactions and health in modern times and studies conducted in a scientific manner may be related to the work of the 19th century French sociologist Durkheim and primarily to his book *Suicide*. In this book Durkheim argues that suicide is more common among widows, single and divorced individuals than among married persons and that an abnormally high or low level of social integration can be associated to this finding - "group life as an antidote to anomie and self-destruction" (132).

In modern times the term social capital has been attributed primarily to Pierre Bourdieu, James S Coleman and Robert Putnam. Unfortunately, the definitions of social capital given by these three scholars diverge as to what social capital is, from where it stems and what impact it has. This indistinctness in the definition of social capital also extends to whether social capital is an individual, group or community property. One theoretical mainstream stems from the definition that Putnam developed and used in his research in political science. In Putnam's original definition two of the

essential cornerstones of social capital are trust and participation in civic and social activities; social capital “refers to features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions.” (28). In this sense, social capital is by many scholars thought to be an ecological concept.

Scholars that have an individual notion on social capital focus primarily on resources acquired from relationships, social structures and social networks and less on participation and trust. Portes argues, for example, that social capital “refers to the capacity of individuals to command scarce resources by virtue of their membership in networks or broader social structures.” (133) and Lin defines social capital as: “resources embedded in a social structure and accessible through social networks.”(134),

Coleman defined social capital as the structure between (mostly) individuals that facilitates certain actions, actions not possible if social capital is lacking (135), which he elaborated into: “social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of social structure and they facilitate certain actions of individuals who are within this structure.” (136).

Bourdieu refers to social capital as partly an individual resource, interchangeable with other kinds of capital (137) and partly as “sum of resources, actual or virtual, that accrue to a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition.” (138).

Fukuyama has an individual notion on social capital and focus mainly on trust; “Social capital can be defined simply as a set of informal values or norms shared among members of a group that permits cooperation between them. If members of the group come to expect that others will behave reliably and honestly, they then will come to trust one another” (139).

Durlauf and Fafchamps have concretized the different definitions and thoughts of social capital into three different main underlying ideas; “a) social capital generates positive externalities for members of a group; b) these externalities are achieved thanks to shared trust, norms and values and their effects on expectations and behaviour; and c) shared trust, norms and values arise from informal forms of organizations based on social network and association. The study of social capital is that of network-based processes that generate beneficial outcomes through norms and trust” (140).

There are several more ways that social capital has been divided and conceptualized. Several scholars distinguish between bonding, bridging and linking social capital; where bonding social capital refers to horizontal ties between individuals and groups sharing similar demographic characteristics. Bridging social capital refers to horizontal ties that cut across different communities/individuals and linking social capital refers to vertical ties, where vertical indicates differences (hierarchical) in power. Szreter and Woolcock have further developed previous thoughts on bonding and bridging social capital stating that “bonding social capital refers to trusting and co-operative relations between members of a network who see themselves as being similar, in terms of their shared social identity” and “Bridging social capital, by contrast, comprises relations of respect and mutuality between people who know that they are not alike in some socio-demographic (or social identity) sense (differing by age, ethnic group, class, etc).” (141).

Furthermore, social capital has been divided into two different yet complementary elements, one that is structural and one that is cognitive (142, 143). Structural social capital is commonly seen as consisting of relationships, networks, associations, and institutional structures that link people and groups together. Cognitive social capital consists of values, norms, reciprocity, altruism and civic responsibility.

Macinko and Starfield conclude that social capital may be conceptualized on both a macro and a micro level. They define four different levels of social capital, ranging from macro-level (countries, regions), through meso-level (neighborhoods), to micro-level. The micro-level consists of two levels. The third level is composed of individual-level behaviors – social participation and social networks. The fourth level is composed of individual-level attitudes, such as psychological factors and trust (122). Hitherto, studies regarding social capital and its possible association with health have mostly had an ecologic approach, thereby leaning heavily on the work and definitions developed by Putnam (28, 144). But, that is not the whole truth; there are several studies in which an individual level perspective on social capital with regard to health and health inequalities has been applied (31-34, 145, 146). The contradistinction between social capital being a collective resource or an individual resource may not be overtly evident or even artificial. For instance, studies has demonstrated a clear interaction between individual trust and collective notions of trust (29). Multilevel analyses indicate that social capital, measured as trust and participation, can be positively associated with health both as a collective and an individual resource (30).

Are possible health effects from social capital on an individual level difficult to disentangle from the individual health effects from social networks and social support? That strong social networks and social support have positive health effects has been rather convincingly shown (147, 148). Not surprisingly, however, no explicit definition exists as to what social networks or social support are. Hanson and co-workers have defined social networks as a strictly quantitative and structural entity, partitioned into social anchorage and social participation. Social participation describes how actively the individual takes part in activities of formal and informal groups of society (149). Social support may be regarded as a function of the individuals' interactions with their social network (150) or as a person's perception of the supportive value of social interactions (151). Social support may be divided into two (or three) headings: emotional support, reflecting the individuals' opportunity for care, intimacy and attachment and instrumental support (which in turn may be divided into tangible and informational support), reflecting the individuals access to guidance, advice and information (149, 151).

Two of the essential cornerstones of social capital are trust and participation in civic and social activities, which despite being independent are said to mutually enhance one another (28). The purpose of measuring participation is to quantitatively attempt to assess the involvement each individual has in the society/community where he/she lives, an involvement that may provide a sense of belonging and attachment, which in turn can have profound positive effects on health (152). This differs from social support, where emotional support may be seen as the ability of a much more personal network to satisfy emotional needs and instrumental support as the ability to obtain practical services. Trust is undoubtedly a principal element of social capital, and as such an independent variable, but at the same time thought to enhance and be enhanced by participation. Trust has also been shown to have great influence on health at the individual level (29, 124).

However, the mutually enforcing relationship between participation and trust is questioned. Fukuyama has introduced the concept 'miniaturization of community' which describes how social participation in more narrowly defined social networks and organizations deplete generalized trust (139). Putnam has argued that the decline in generalized trust in the USA since the 1960's may be related to a shift from participating in large organizations to sub-small activities (144). The notion that high social participation may be concomitant with low generalized trust has been shown in previous studies with regard to Swedish conditions (153). When studying the possible impact that social capital may have on health, it needs to be stated that there is also reason to believe that social capital may have potentially detrimental effects.

Consider, for example, Hells Angels and Bandidos, two dense networks of people sharing the same 'ideas' and morals, networks in which the feelings of trust and reciprocity towards other network members are supposedly strong. The level of social capital within these groups is thus high – though it may be difficult to argue that this will have any positive effects on health for the individual members of these networks or the general public.

7. Material and methods

7.1 Data gathering

Postal questionnaires

The first two papers were based on a postal questionnaire (PQ I) that was distributed nation-wide in the spring of 2001. The questionnaire was distributed by mail to 4 000 randomly chosen individuals between the ages of 20-64. Randomization was done in collaboration with Statistics Sweden and respondents were randomized from the Total Population Register (TPR). The inclusion criterion for being randomized into this study was simply being age 20-64. Each individual received an accompanying letter that explained the purpose of the investigation. The response rate was 66 percent and non-responders were more often of non-Swedish origin (42 % vs. 32 %), men (40 % vs. 27 %) or younger than 34 (40 % vs. 28 %).

Papers III and IV were based on a postal questionnaire (PQ II) that was distributed during the fall of 2003. This questionnaire was distributed to 2 500 randomly chosen parents (custodians) of children aged 4-16. The randomization, for which we used data from the Total Population Register (TPR), was done in collaboration with Statistics Sweden. The inclusion criteria for being randomized into this study was being a custodian of at least one child between the ages of 4 -16 and that the child was nationally registered at the same household as the respondent. Nationally, the total number of custodians that met this criteria was 868 554 at the time of this investigation.

Each respondent received an accompanying letter that explained the purpose of the investigation. The questionnaire was returned by a total of 1 589 subjects, giving a response rate of 64 percent. The non-response rate was higher among persons who were not of Swedish origin (45 percent vs. 34 percent for those of Swedish origin) and among men (44 percent vs. 31 percent for women). The response rate was also associated with income, such that those with particularly low income had a higher non-response rate.

Total population register (TPR)

Respondents to both questionnaires have been randomized from the Total population register (TPR) which is maintained by Statistics Sweden. The register is up-dated on a daily basis due to notifications of births, deaths, migrations, etc., which the TPR receives from the local Tax Authorities.

7.2 Variables

7.2.1 Socio-demographic variables

Age

In the first two papers respondents were between the ages of 20-64. The age span was chosen, primarily, with regard to the age span during which Swedish citizen are most active on the labour market. Since age is a very possible confounding variable, age was included into all multivariate logistic regression analyses as a continuous variable and hence all results are adjusted for by age.

In papers III and IV the age span of the investigated parents were between 19 and 72 years of age. The mean age was 40.9, with mothers being younger (mean 39.9 years) than fathers (42.8). Age as a possible confounding variable was dealt with in analogy with papers I and II and included in all multivariate analyses as a continuous variable and hence all results are adjusted for by age.

In paper IV the age of the children assessed by parents were also included. The mean age of all children assessed in this study was 10.4, and with no difference between children with or without mental difficulties. The age of the children may also be a possible confounding variable and was hence included into the multivariate logistic regression analyses as a continuous variable.

Sex

In all four papers both men and women were in focus and results are presented separately. In paper III women, i.e. mothers, are more extensively analysed than men, i.e. fathers. This is mostly due to the fact that a much smaller share of single fathers are registered at the same address as their child and consequently some extensive analyses were not done due to small numbers of respondents in some sub-groups.

In paper IV the sex of the child might be a possible confounding factor, since boys more often than girls tend to score above the 90th percentile score which was used as a cut-off score for having mental difficulties. This was, however, not the case in our study, where there were no difference between boys and girls with regard to the distribution of mental difficulties. Hence, the sex of the assessed children was not included into the multivariate logistic regression analyses.

Origin of birth

Origin of birth is a well-known possible confounding variable that is analysed and presented or adjusted for in all four papers. Due to the rather small total number of respondents with a non-Swedish origin, respondents have been dichotomized into being either Swedish or non-Swedish. The respondents of non-Swedish origin may thus be from other Nordic countries as well as from Africa or Asia, and we fully acknowledge the fact that we commingle immigrants known to have quite disparate health and socio-demographic and socio-economic characteristics.

Marital and parental status

In paper I both parents and non-parents are included, whereas all respondents in papers II, III and IV are parents, even though there is a slight difference in how being a parent is defined in the different papers.

In papers I and II being a parent is defined as having custody of a child 0-18 years of age, regardless of where the child is nationally registered or resides. In papers III and IV being a parent also meant, besides having custody of a child 4-16 years old, that the child is nationally registered in the same household as the parent. This will inevitably mean that the number of single fathers in papers III and IV will be small since an overwhelming majority of all children to separated parents are registered with their mother despite joint custody.

The reasons for including actual residency in the definition of parenthood are that: this postal questionnaire (PQ II) included questions regarding the health and behaviour of the child that are best answered by the parent with the fullest knowledge about the child; and having custody does not fully imply that the parent is involved in the everyday life of the child, which is a presumably important criterion when investigating possible associations between parenthood and health, both parents' and children's.

In paper I, marital status was divided into three categories – married, cohabiting or single – but into just two categories – couple (including both

married and cohabiting respondents) and single parents – in papers II and III. Paper IV also includes three categories, where couple parents are divided into either reconstituted parent (living with a partner other than the biological parent of the child that has been assessed) or couple parent (living with the biological parent). The reason as to why couple parents are divided further is the presumption that it may be influential with regard to children's mental health (121).

The weakness of the Total Population Register (TPR) regarding overestimation of the number of single parents (58) is not present in our papers, since all classification regarding marital and parental status is dependent on the answers given to the questions about custody and marital status (in which we include cohabitation).

7.2.2 Socio-economic variables

Level of education

Education is another possible confounding variable that is analysed and presented or adjusted for in all four papers. Education level is divided into three levels: nine-year compulsory school, upper secondary school (includes both theoretical and practical courses of study and programs two, three, or four years in length), and university studies.

Employment status

Employment status was not included in paper I, but in papers II, III and IV. Employment status was divided into three levels: employed full time, employed part time and non-employed. In paper II, the latter group comprised only the unemployed, while papers III and IV included the unemployed, students, parents on maternity/paternity leave and those given early retirement due to ill health.

The distribution of employment status is presented in papers II, III and IV. Due to the limited number of unemployed in paper II, employment status is not included in any multivariate analysis in that paper, however it is included in multivariate analyses in papers III and IV. It is important to be able to at least to some extent analyze data with regard to employment status, since it is a variable that is well known to correlate closely with health and health care utilization (154).

Financial status

Both postal questionnaires (PQ I and PQ II) contained several questions regarding the respondents' personal finances: monthly earnings (PQ I),

difficulties dealing with fixed expenses within the previous year (PQ I and II), difficulties procuring SEK 14 000 (1 494 Euro 060502) for an extraordinary cost within a week (PQ I and II), having any money to put aside for savings (PQ I) and whether the respondent had been worried about his/her personal finances within the last three months (PQ I and II).

Information about personal finances was not used in paper I. In papers II and III a Spearman correlation matrix was constructed with the questions regarding financial status, in which questions regarding self-rated health were included. All but one included questions regarding financial status were closely correlated with each other, and they all correlated with self-rated health. The variable regarding financial status that was most closely associated to all questions regarding health (correlation coefficient 0.62) was "Have you been worried about your personal finances the last three months?". This question was then chosen to function as a proxy for financial status (indicating financial stress) in papers II and III and answers regarding this question were dichotomized into either yes or no. This question was also chosen to function as a proxy for financial status in paper IV.

Results for financial status, presented as financial stress, are presented and multivariate analysis also adjusted for in papers II, III and IV.

7.2.3 Social support and social capital

In postal questionnaire II there were several questions regarding social support, instrumental and emotional, and social capital. A factor analysis was conducted to make sure that these three variables represented three different entities, distinguishable from each other, and that each variable demonstrated internal validity. Each question was included into the factor analysis (participation as a dichotomous variable) and it was obvious that each variable was indeed distinguishable from the others (Table III). The Cronbach Alpha value for instrumental support was 0.61, for emotional support it was 0.72 and for social capital it was 0.44, giving good evidence of internal validity, at least for instrumental and emotional support. The lower value for social capital was expected since it is made up of one structural and one cognitive element of social capital (*see also chapter 6, Social capital*).

Emotional social support

Emotional social support was constructed as a dichotomous variable, Full emotional support or No emotional support, out of these three questions:

“Sometimes one needs help and support from others. Do you have a relative or close friend who is there for you in case...”

- a) You get sick (Yes or No)
- b) You want company (Yes or No)
- c) You need to talk with someone about personal worries (Yes or No)

Any parent that did not answer yes to all of these questions was considered as not having full emotional support in contrast to having full emotional support.

Instrumental social support

Instrumental social support was divided into a three-legged variable (due to a much more even distribution in answers when compared to emotional social support) out of these three questions:

“Sometimes one is in need of specialist knowledge. Do you have a friend or acquaintance that can help you with...”

- a) Repairs, maintenance or skilled labour (Yes or No)
- b) Medical knowledge (Yes or No)
- c) Financial or legal knowledge, i.e. income-tax return form (Yes or No)

The three-legged variable included these categories: Full instrumental support (if parents answered yes to all of these questions), Some instrumental support (yes to one or two of these questions) and No instrumental support (if none of these questions were answered with a yes)

Social capital

Social capital is measured as civic and social participation and trust or as a combination of these two.

The question regarding civic and social participation read: “Have you participated in any of the following activities the last 12 months? Tick that or those alternatives that are valid in your case...”

- a) Study circle or study group at work
- b) Study circle or study group at any other location
- c) Union meeting
- d) Meeting in any organisation
- e) Going to a cinema or theatre
- f) Going to an art exhibit
- g) Attending church service or other religious gathering
- h) Attending a sports event
- i) Writing a letter to the editor
- j) Attending a demonstration
- k) Going to a discotheque or night club
- l) Large family gathering
- m) Private party

The answers were then dichotomized into either a high level of participation (four or more activities) or a low level of participation (three or less activities).

Trust, consisted of a single question: “Can most people be trusted? (Yes or No)

In paper III, civic and social participation and trust were regarded and treated as two independent entities and measures of social capital, however with a presumption that they influence each other.

In paper IV, social capital was measured as a four-legged variable constructed out of civic and social participation and trust. The combinations of participation and trust resulted in four categories; High trust/high participation, high trust/low participation, low trust/high participation and low trust/low participation.

Table III. Factor analysis of three items regarding social support (instrumental and emotional) and social capital.

	Item 1 Instrumental social support	Item 2 Emotional social support	Item 3 Social capital
Help with repairs, maintenance and skilled labour	0.741	0.089	-0.023
Help with medical knowledge	0.693	0.082	0.149
Help with financial or legal knowledge	0.748	0.036	0.080
Close friend in case you get sick	0.192	0.757	-0.043
Close friend in case you want company	0.115	0.785	0.111
Close friend you can talk to about personal worries	0.032	0.786	0.046
Civic and social participation	0.081	0.048	0.815
Trust	0.153	0.035	0.725

Factor analysis using Principal Component Analysis as Extraction Method and Varimax with Kaiser Normalization as Rotation Method. Values from Rotated Component Matrix.

7.2.4 Outcome variables – health and health care utilization

Health

There are several different and valid instruments to measure self-rated health (SRH) – instruments that have been shown to measure health, function and well-being as perceived by the individual and that are very well associated with both present and future morbidity as well as mortality (69-71). SRH is mostly measured by a single question, varying within three different categories: global non-comparative SRH, global age-comparative SRH and global time-comparative SRH. Age- and time comparative SRH are often referred to as relative SRH in order to distinguish them from the non-comparative SRH, which in turn is referred to as general SRH.

Self-rated health, general

A similar question regarding general self-rated health was included in both PQ I and II and the results were used in papers II and III. The question read “How would you assess your health?” and respondents were given a five-

graded scale, ranging from Very good to Very poor (in-between were Good, Neither good nor poor and Poor). The answers were then dichotomized into either good (Very good and Good) or less than good (Neither good nor poor, Poor and Very Poor).

Self-rated health, relative (age-referential)

In both PQ I and II the same question regarding relative self-rated health was included which read: “How is your health in comparison with other people your age?”. Answers were given using a three-graded scale ranging from Better to Worse, with the alternative Neither better nor worse in between. Answers were dichotomized into either “Better or same health as other people my age” or “Worse than other people my age”. This variable was used in paper II.

Long-standing illness

In paper I health care utilization is also analysed with regard to long-standing illness. Both PQ I and PQ II included a question that read: “Do you suffer from a long-term illness, late consequences of an accident or any disability?” This question was to be answered by a yes (and if so, for how long) or no.

SDQ (Strengths and Difficulties Questionnaire)

In Paper IV children’s mental health is assessed using the SDQ, a brief behavioural screening questionnaire designed for 3-16 year olds, which has been validated and used in numerous studies (155-158). The design of the SDQ with both strengths and difficulties items supposedly increases acceptability of the instrument on behalf of informants and makes the questionnaire especially suitable for studies of general populations where the majority of children are healthy. The questionnaire exists in several versions to meet different needs. The version used in paper IV is the p-SDQ, where the p stands for parental – inferring that the parents are to assess their children. A self assessment and a teacher’s assessment version also exist. The SDQ comprises 25 items, each of which is rated “certainly true”, “somewhat true” or “not true”. There are five sub-scales (emotional symptoms, peer problems, hyperactivity, conduct problems and pro-social behaviour) and a total difficulties score, which is derived from four of these subscales. Pro-social behaviour is the one subscale that is not included in the total score. Higher total scores indicate higher rates of mental health problems.

The 90th percentile was used as the cut-off, at a total score of 13 or above in accordance with previous research and our sample matched those of earlier investigations from Sweden and Scandinavia almost perfectly (157). Children's mental health will thus be considered as a dichotomous variable where children that scored above the cut-off are considered as having mental health problems (156, 158, 159).

Health care utilization

Health care utilization can be assessed by measuring health care consumed, numbers of visits to the doctor and different health care facilities etc. Another way of measuring health care utilization is to assess, or try to assess, the amount of health care that never came to be despite a perceived need for such, e.g. unmet medical needs. This latter method implies that medical needs, at least partially, can be assessed by the patient.

One of the most widely spread theories regarding health care utilization, elaborated by Andersen, contains two fundamental concepts, namely "need components" and "provider factors" (160, 161). "Need components" refers to perceived illness and how a need for medical care is transformed into demand due to an inclination to seek medical care. "Provider factors" refers to how the health care organization, the providers, is brought into line with patients' needs and resources as well as the propensity to seek medical care based on previous experiences (162).

That perceived medical needs do not transit into demands (for health care), leading to health care utilization and ultimately to improved health may then raise concerns of inequity. It has been shown that health care utilization among Swedish citizens is influenced and constrained by several socio-demographic and socio-economic factors: education (7), origin of birth (8, 9), employment status (163) and financial status (5, 6, 164). Health care received is often measured as health care utilization and also as a proxy for accessibility of health care (165), a proxy which then again may be equitably unsound. As shown above utilization can be narrowed by less accessibility to health care due to patient fees and cultural and linguistic disparities but also attitudes toward care givers and the health care system (160). Availability to health care, which is of equal importance when assessing accessibility and equity, may also be constrained by several factors: geographical (localization of health care establishments), physical (means of getting to and from health care establishments), operating hours and ability to obtain medical referrals (166).

Medical care consumed

In both PQ I and PQ II the same question was included regarding medical care consumption. The question read: “Have you, during the last three months, seen or spoken to a physician on account of your health?”. Answers were either Yes or No. The results from PQ I are presented in papers I and II.

Unmet medical needs

To be able to analyse medical needs that have not been met, PQ I and PQ II contained questions regarding whether the respondent refrained from medical care, despite a perceived need thereof. Moreover, both questionnaires also included questions regarding possible reasons as to why one would refrain from seeking medical care and what respondents did instead.

These questions are analysed and the results are presented in papers I and II. In paper I there is a more extensive analysis regarding unmet medical needs and different reasons for respondents choosing not to see a physician, whereas in paper II unmet medical needs are analysed and presented with regard to parental status and sex.

7.3 Statistical analyses

In order to analyze and present all the data from the questionnaires, four different statistical analyses have been performed using SPSS 14.0 for Windows.

Chi-square (χ^2) tests were used to analyse the variation in distribution in health and health care utilization with regard to parental status and sex (paper II) and in health care utilization with regard to different characteristics (paper I). Chi-square tests were also used to analyze the variation in distribution concerning different characteristics with regard to parental status and sex (papers II, III and IV). Statistically significant differences between proportions for two or more groups were to be determined by p-values below 0.05 and 0.01 (** = $p < 0.01$, * = $p < 0.05$).

Spearman correlations were used to compare and estimate correlations between consumption of medical care and the decision not to seek a physician despite a perceived need thereof (paper I) and as a means of finding an appropriate proxy for the variable ‘financial stress’ (papers II, III and IV).

Multivariate logistic regression was used in all four papers in order to further investigate the impact of different variables on health and health care utilization. Odds ratios (OR) and 95 % confidence intervals were used as a measure of effects. In paper III Wald-statistics were also used as a measure of effects.

A factor analysis was performed (papers III and IV) to certify and ensure that each of the three variables Instrumental social support, Emotional social support and Social capital was distinguishable from the others and that they also demonstrated internal validity (Cronbach's alpha).

7.4 Ethical approval

The ethics committee at Uppsala University approved all studies (Paper I: Dnr Ups 99467, Paper II-IV: "Families, health and health care utilization"; Dnr Ups 03-140).

8. Results

8.1 Paper I

This study aimed to look into how different socio-demographic variables influence unmet needs i.e. why one would refrain from seeing a doctor, despite a perceived need for medical care. A nation-wide postal questionnaire was answered by 2 648 randomly chosen individuals aged 20-64. The questionnaire included questions on health and health care utilization along with data on different socio-demographic variables.

Approximately half the population had been in contact with a physician the last three months, either by visit or by telephone. Women (OR 1.61) and those of a non-Swedish origin (OR 1.40) were more likely to consume medical care than men and inborn citizens. The proportion of citizens that refrain from visiting a physician despite a perceived need was higher (24 percent) than in any previous Swedish investigation. Women (OR 1.42), those of a non-Swedish origin (OR 2.73) and those with a low level of education (OR 1.33) refrained from going to the physician to a greater extent than men, inborn citizens and those with higher education. Stated reasons as to why the respondents refrained from medical care were associated primarily with confidence, finite availability and economy. Symptoms associated with the decision to refrain from visiting a physician were overstrain, symptoms of stress, depressive symptoms, fatigue and lack of concentration. These specific symptoms were in turn not associated with specific reasons for refraining from medical care. It appears that the Swedish health care system is not fully adapted to provide for the hitherto unmet needs of a large proportion of the population and that this poses concerns regarding equity.

8.2 Paper II

The aim of this study was to analyze self-rated health and health care utilization with regard to family constellation; single versus couple parent, mothers versus fathers. A postal questionnaire was distributed nation-wide to 4 000 randomly chosen individuals aged 20-64. A total of 1 041 respondents (of which 150 were single parents and subsequently 891 were married or

cohabiting parents) had legal custody of a child, which defined a parent in our study. Analysis of self-rated health and health care utilization was performed with respect to sex, age, socio-demographic and socio-economic characteristics.

Origin of birth, employment status and financial status were unevenly distributed between single and couple mothers, with single mothers being immigrants, poorer, unemployed or part-time employed to a greater extent than couple mothers. Among fathers employment status and financial status were unevenly distributed. However, there were differences between single fathers and single mothers in this respect. Single fathers were seemingly far better off than single mothers were. Both single fathers (OR 2.91 age-referential SRH) and single mothers (OR 2.10 global SRH) reported worse health than their married or cohabiting counterparts. However, single fathers had contact with a physician more frequently (OR 1.84) than married or cohabiting fathers, whereas single mothers had not. On the contrary, single mothers refrained from seeing a physician, despite a medical need, much more often (OR 2.07) than non-single mothers.

Uneven distribution of socio-demographic and socio-economic characteristics might help us to understand why single parents, mothers as well as fathers, had poorer health than non-single parents. Previously found gender differences in regard to health care utilization were present in our study as well and these differences may have been strengthened by the unequal distribution of socio-demographic and socio-economic assets that was found between single fathers and single mothers.

8.3 Paper III

The purpose of this study was to investigate if social capital was associated with parental self-rated health and if so, if existing inequalities in health between single and couple parents could be better understood by introducing social capital as a possible mechanism by which health is distributed. From existing national registers 2 500 parents with children in the age range of 4-16 years were randomized and asked to participate in a nationally distributed postal questionnaire. 1 589 parents, 277 single and 1 312 couple parents participated. The questionnaire contained questions regarding socio-demographic and socio-economic characteristics, self-rated health, emotional and instrumental social support, civic and social participation and trust. Social capital was measured by civic and social participation and trust. Multivariate logistic regression analysis was used in order to find possible associations between social capital and health, when adjusted for by social support and socio-demographic and socio-economic characteristics.

The factor analysis showed that the three items regarding Emotional social support, Instrumental social support and Social capital were clearly distinguishable from each others. There were statistically significant differences present between single and couple mothers with regard to every investigated variable. Single fathers did not differentiate themselves from couple fathers to the same extent, but employment status and financial status were unevenly distributed. Low levels of social capital, both participation and trust, when adjusted for socio-economic and socio-demographic variables, were clearly and positively associated with less than good self-rated health (OR Low trust 1.73, OR Low participation 2.03). Social capital was unevenly distributed between single and couple mothers; single mothers having less trust (33 % of single mothers had low levels of trust) and participated less (39 %) than couple mothers (20 and 25 %, respectively). This was, however, not the case between single and couple fathers, where trust and participation were rather evenly distributed. Other characteristics found to be associated with self-rated health in the full model were emotional social support, employment status, financial status and level of education. Marital status, sex, origin of birth and instrumental social support were not independently associated with health in the full model.

Social capital is positively associated with self-rated health on an individual level. The uneven distribution of social capital between single and couple mothers may be of some importance when trying to further understand and possibly alter the inequality in health that exists between single and couple parents.

In order to investigate if there were any interactions between marital status and social capital an additional multivariate logistic regression analysis was done. Such an analysis might provide information about vulnerability, which hypothetically would be increased among single mothers. The additional analysis did not, however, unveil any such interactions (analysis not presented in paper).

8.4 Paper IV

The unequal distribution of health between single and non-single parents is widely recognized. This health disadvantage is also found among children living with only one parent, in contrast to children living with two parents. This study aimed to investigate how parental characteristics such as marital status, health, socio-demography, socio-economy, social support and social capital are associated with children's mental health and if these possible findings raise concerns about equity. A postal questionnaire was distributed nation-wide to 2 500 randomly chosen parents with a child aged 4-16 years. Children's mental health was assessed using a specific tool – the Strengths

and Difficulties Questionnaire (SDQ) which was included in the questionnaire. Three different statistical analyses were performed; Factor analyses, Chi-square analyses and Multivariate logistic regression.

A total of 1 574 children with a mean age of 10.4 years were assessed by their parents. Using the 90th percentile as a cut-off, 171 children (10.9 percent, mean age 10.8 years) will be assumed to have behavioral and/or emotional problems (mental health problems). Of these children 91 were boys (11.2 percent of all boys) and 76 were girls (10.2 percent of all girls). Mental health problems among children were not associated with the age or sex of the child or their parent. However, family constellation, origin of birth and level of education were non-randomly distributed, and being a single parent, a parent of non-Swedish origin or a parent with a lower level of education correlated with poorer mental health among corresponding children. All socio-economic characteristics were unevenly distributed, such that parents with children that had mental difficulties were much worse off. These parents were much more often non-employed and had financial concerns to a greater extent. Parents whose children had poorer mental health also had lower levels of both emotional support and instrumental support. Furthermore, these parents also had much lower levels of social capital. In addition, there was a distinct difference in parental health between children with and without mental difficulties, such that the former children's parents rated their health as less-than-good to a greater extent. In a multivariate logistic regression analysis, four parental characteristics remained as independently associated with poorer mental health in children; single parenthood (OR 1.71), limited emotional support (OR 1.96), low level of social capital (OR 1.97) and poor parental health (OR 1.87).

Children living in single-parent families are possibly at higher risk of developing behavioural and emotional problems than children from two-parent families. This possible association still remains, even after being adjusted for other influential parental characteristics as health, 'financial stress', social support and level of social capital.

9. Discussion

9.1 Main findings

9.1.1 Differences in Health

Parental health

There were undeniable differences in health between single and couple parents, both fathers and mothers, differences concordant with previous research (11-13, 15, 16). Health was to be assessed by self-evaluation, using global and relative assessments, both of which are commonly used and judged to be validated instruments (167-169). There were differences between men and women with regard to how health was assessed when using the global and relative self-related health measurement. Single parent mothers generally assessed their health as non-good to a greater extent than single parent fathers. However, single parent fathers assessed their health as worse than others their age to a greater extent than single parent mothers. Such differences in gender are partly consistent with previous findings and provide no reason to vacillate in the interpretation of how health is distributed between single and couple parents (167, 170). However, there is reason to believe that this reflects a gender difference between men and women with respect to how they relate themselves to an imaginary reference group (171).

Health was associated with well-known socio-demographic and socio-economic determinants; origin of birth, level of education, financial status and employment status. Furthermore, both emotional social support and social capital were firmly associated with health. The distribution of health between single and couple parents can to a great extent be explained by the uneven distribution of these determinants among parents. It may also be stressed that marital status, being single or couple, did have an independent association with self-rated health when adjusted for socio-demographic variables, age and either financial stress (paper II) or social support and social capital (paper III), but not when adjusted for all of them simultaneously (also including status of employment, paper III).

Children's mental health

It is regularly estimated that approximately ten percent of the child population has behavioural and/or emotional problems serious enough to be of clinical importance, even though a much smaller share actually are referred to a specialist (159, 172). In our study the cut-off (at the 90th percentile) was placed in accordance with this previous research and our sample matched those of earlier investigations from Sweden and Scandinavia almost perfectly (157).

The results presented in this study suggest rather large discrepancies in mental health among children with regard to different parental characteristics, albeit some characteristics seem to be of greater importance. Four parental characteristics were found to be independently associated with children's mental health: single parenthood, low emotional social support, low social capital and poor health.

9.1.2 Differences in Health care utilization

Health care utilization is commonly measured by health care consumed (165, 166), which is seemingly lacking in at least one dimension. For instance, this definition does not consider unmet medical needs, whatever the reason. Unmet medical needs correspond to perceived medical needs that have not been transited into demand and subsequently never into consumption. When analyzing health care utilization, we think that one must consider refraining from medical care as an entity of its own. If a large share of the population decides not to see a physician despite a need for medical care, then assessments of utilization according to need (and demand) would lack valuable information.

Differences in health care utilization are mainly measured here as differences in how perceived medical needs are met. My investigations show that health care utilization is disproportionately distributed between several investigated groups; men versus women, natural born Swedish citizens versus Swedish citizens originating from abroad, highly educated versus those with a lower education level and between single and couple parents (preferentially mothers).

Stated reasons as to why the respondents refrained from medical care were associated primarily with confidence, finite availability and economy. Those who stated confidence and/or finite availability as reasons not to seek medical care did not differ with regard to socio-demographic characteristics. Every fifth person that refrained from medical care stated economic reasons for their choice, which is in line with previous investigations (6). It was also

among these respondents we found distinct incongruities between different socio-demographics; singles, those who were of non-Swedish origin and those with a low level of education strikingly more often stated economic reasons for refraining from medical care.

Symptoms associated with the decision to refrain from visiting a physician were overstrain, symptoms of stress, depressive symptoms, fatigue and lack of concentration. These specific symptoms were in turn not associated with certain reasons given to why respondents refrained from seeking medical care.

9.2 Theoretical implications

9.2.1 Determinants of health

If we consider the investigated variables that are known to be associated with health, we find that almost all investigated variables and characteristics with a possible impact on health were found to be unevenly distributed between single and couple mothers (with the exception for level of education in paper II (PQ I)), and to some extent between single and couple fathers (status of employment and financial status).

The health differences between single and couple parents can then to a great extent be explained by the uneven distribution of these socio-demographic and socio-economic variables, since they in turn are closely associated with health; financial status (106, 173) and status of employment (154) for both mothers and fathers, and origin of birth (107), level of education (105) and access to emotional social support (174, 175) for mothers.

There is mounting evidence that relative material deprivation is at least as important as absolute material or income deprivation, especially in Western European societies (97, 100). Absolute material deprivation leads to inadequate access to resources that are important in order to obtain and sustain health, and we might conclude that this is not a dominant explanation for why there are health differences between single and couple parents in Sweden (12). There are two causal mechanisms proposed for the transition of social position into health; comparisons with regard to status, possessions and other life circumstances leads to feelings of shame, worthlessness and envy that leads to adopting health-threatening coping behaviours (102). The other mechanism proposes that low social position is linked to biological stress pathways that are ultimately related with health (103, 104).

With regard to parental health other possible mechanisms have been proposed to explain why single mothers (in particularly) have poorer health than couple mothers. The Swedish welfare policy clearly emphasizes a 'work policy', which has resulted in single mothers in Sweden working full-time to a greater extent than in other Western European societies. This possibly has a positive effect on single mother's economy, but will at the same time inevitably mean that these mothers suffer from 'time-poverty' with greater psycho-social stress due to loss of control over day-to-day life (176). Single mothers are also believed to be exposed to greater occupational health hazards due to a more insecure position on the labour market (12).

Another subject that needs to be mentioned when discussing single mothers and single fathers is the vast difference between being a custodian and having the everyday responsibility for a child. There is no way to tell to what extent the custodian single fathers (paper II) took part in their children's everyday life and hence we cannot assess how this possible commitment may have influenced their health. Furthermore, when making comparisons between single mothers and single fathers, it is important to remember that the two entities may be derived from different cohorts. Single fathers almost exclusively derive from a previous relationship (marriage/cohabitation) with the child's mother. Single mothers, on the other hand, may have been single parents all along, since custody (joint) is not regularly given to the child's biological father unless the father was married to or cohabited with the mother at the time of the child's birth (and fatherhood has been established in case of cohabitation). Single mothers, whose parental status does not originate from a marriage or a cohabiting relationship, might be even less endowed with socio-economic assets that might alleviate their situation.

Another important aspect is that living with children may indeed have positive implications toward health, in contrast to living alone, and most definitely so after a divorce (111). Living with a child brings structure in life of a divorcee; they provide company and give life a meaning. They may also provide access to other people, through interaction with other parents at community child-care centers, school, leisure activities and the neighbourhood (109).

Socio-economic disadvantage is also an important determinant with regard to children's health (25). But it is not easy to disentangle the impact of divorce or parental dissolution on children's well-being from other parental characteristics knowingly influential on children's health. These parental characteristics are in turn known to be in concordance with being a single parent; poor socio-economic status, low social support, poor health and time-poverty (27, 117). A non-optimal child rearing, including 'hostile parenting'

is known to mediate low socio-economic status, parental health and exposure to acute and chronic stressors with child well-being (177). Anti-social behaviour in boys has been associated to living in single mother families, possibly mediated by poor maternal monitoring and inadequate discipline towards the child. Poor monitoring and inadequate discipline are in turn independently associated with increased levels of stress, socio-economic disadvantages, diminished social status and antisocial personality of the parents (178).

9.2.2 Social capital

It definitely seems that social capital, measured as trust and civic and social participation is associated with SRH at an individual level. There are previous studies that support such a finding (32-34) (153) whereas Veenstra did not find any strong associations between self-rated health and social capital on an individual level (31). Before discussing why this might be, there is reason to try to distinguish social capital on an individual level from social capital on a group/community level.

Using a later, but rather widely used definition by Putnam, where social capital is defined as the features of social organization – such as civic participation, norms of reciprocity, and trust in others – that help facilitate cooperation for mutual benefit (144), there is mounting evidence that social capital is associated with health on a group/community level (124, 131). Defined as such, social capital can be considered to be a collective resource distinguished from individual health effects from social networks and social support (179). Several proposals have been put forth regarding the possible mechanism that links social capital with health: that social capital facilitates the dissemination of health information and knowledge; that socially cohesive communities have better access to local services and amenities (124); and that communities with a high level of social capital more effectively exercise social control over different health behaviours (29).

In our studies, the purpose of measuring participation is to quantitatively attempt to assess the involvement each individual has in the society/community where he/she lives, an involvement that may provide a sense of belonging and attachment, which in turn can have profound positive effects on health (152). The index used when measuring participation can be criticized since it contains activities that could be seen as solitary and hence not fully conform to the definition of social participation as an aspect of social capital (180). Though this may be true, in order to fulfil its definition with bearing on social capital, social participation should also have an influence on trust. Generalized trust has been argued to be a trait of “weak social ties” which is concordant with social participation in more diverse

associations and social contexts (153, 181). It might be expressed as; there are specific carriers, individuals, of generalized trust that participate in several different civic and social activities and hence increases social capital for those participating in that activity/network. This having been said, strong social networks may have robust positive health effects on their own and at the same time constitute a fundamental part of social capital. This duality may in fact have a rather solid explanatory value when trying to understand the possible health effects and mechanisms of social capital.

Trust is undoubtedly a principal element of social capital, and as such is an independent variable, but at the same time thought to enhance and be enhanced by participation. Trust has also been shown to have great influence on health at the individual level (29, 124). So, if each of these two elements of social capital is believed to influence health at an individual level, then social capital, if constructed from these two, should as well. So, by quantitatively measuring these two elements of social capital (not forgetting that we are mixing a structural element (participation) with a cognitive element (trust)), a proxy for social capital might then be constructed, as has been done in previous studies (127, 153, 182). This construction of social capital, which differs from social support (where emotional support may be seen as the ability of a much more personal network to satisfy emotional needs) and instrumental support (the ability to gain access to practical services) may indeed indicate marginalization. This differentiation of social capital from social support was also supported by the factor analysis we performed (Table I). The rather low Cronbach Alpha value for social capital (0.44) surely reflects its heterogeneous construction and accounts for why these two elements may also be presented separately. Presenting them separately might also be well in line with how Macinko and Starfield conclude that social capital may be conceptualized on a micro level; level three is composed of individual-level behaviors – social participation and social networks. The fourth level is composed of individual-level attitudes, such as psychological factors and trust (122).

Social capital has been argued as the link between economic inequality and health, by which social capital is depleted by socio-economic inequalities, at least at a community level (124, 183). This link or mechanism may most certainly exist, in that financial assets and/or sufficient social (instrumental as well as emotional) support make it easier to gain social capital. Being a single mother entails not only a need to cut down on working hours, hence reducing wages and possibly increasing 'financial strain'. Smaller financial means also make it more difficult to participate in many social and civic activities.

Additional mediators between health and social capital may also be pertinent with regard to single parents. Great psychosocial stress due to time-poverty not only affects health (176, 184), a lack of time also makes it more difficult to participate in activities. Perceived lack of social support has been found to be a mediator for poorer health in single mothers (175), and it is easy to see how a feeling of insufficient support would influence trust. Not participating in informal and formal social and civic activities and having a low generalized trust may also be a strong measurement for being marginalized or socially excluded, which is known to be associated with both health and socio-economic status (84, 89). Altogether, this strengthens the hypothesis that the impact of social capital on health differs due to socio-economic circumstances (185).

9.2.3 Equity concerns

Using the definition of equity in health proposed by Braveham and Gruskin (41), when determining whether the unequal distribution in health found in my studies also is inequitable, we have to consider if systematic disparities in health (or in the major social determinants of health) exist between social groups who have different levels of underlying social advantage/disadvantage. The distribution of different socio-demographic and socio-economic characteristics, regarding both sex and marital (household) status, strongly indicates that there is such a 'systematic disparity'. Women and single parents (preferentially mothers, but also, to a lesser extent, fathers) are unfavourably furnished with such characteristics concerning origin of birth, education, employment status and financial status, all of which are in turn related to health (74, 105-107, 173, 186, 187).

Levels of social support and social capital, indicators of social capabilities and marginalization, are variables that can be used to further investigate the magnitude of social disadvantage (being at the lower end of a social hierarchy scale or lacking power). All these variables are also unfavourably dispersed among women and especially single mothers (single fathers seem to be better endowed in this respect). Again, these are variables that have been linked to health, further confirming that there is indeed a systematic, and as such an inequitable, distribution of health between single and couple mothers.

Having determined that health is inequitably distributed, a similar approach may be taken toward health care utilization. This can be done by using the definition of equity in health care utilization given by Culyer and Wagstaff; "equitable distribution of health care is simply one which gives rise to an equal distribution of health"(49). Using this definition means that we to a certain degree have to postulate that medical care is a necessity in order to

move from illness to health and that perceived medical needs that have not been met thus is a valid measurement of (lack of) health care utilization. And this conclusion is by no mean less valid if we consider Krasnik's definition of equitable health care: "in which the amount of health care received correlates closely with indicators of need and is independent of variables such as income, which are irrelevant to need" (48). Unmet medical needs are seen to be highly associated to certain characteristics, namely sex, origin of birth, education level and financial status, findings supported by previous research (5-9). The pronounced unfavourable distribution of financial status with regard to single mothers makes this group highly disadvantaged with regard to health care utilization (as well), and definitely in a manner that has equity-related concerns.

Regardless of how health through different mechanisms and pathways may be superseded by illness (mechanisms and pathways that are associated with characteristics shown to be unequally distributed and by reason of the systematic disparities, equitably dubious), health care may also be a necessary prerequisite for (maintaining) health. According to my findings, this particular pathway to health is as unequally distributed as health, hence calling for the same concerns with regard to inequity.

9.3 Practical implications

As mentioned in the Introduction; in 2003, the Swedish parliament adopted a new public health policy with one overarching national aim and eleven objective domains. The primary aim of the policy is to improve public health and to reduce inequalities in health among different groups of the population. Three out of the eleven objective domains are directly related to this thesis; a) Participation and influence in society (social capital), b) Secure and favourable conditions during childhood and adolescence and c) A more health-promoting health service (38).

Social capital, at an individual level, has as a robust an association with self-rated health as any traditional social determinant of health. Both participation and trust are significantly unequally distributed between single and couple mothers, but not so between single and couple fathers. Less participation may be looked upon as less involvement in the society/community where he/she lives, an involvement that may provide a sense of belonging and attachment, which in turn is known to have effects on health. Generalized trust is also known to have implications on individual health. This gives that action taken by society to enable single parents (or any underprivileged group in society) to increase their social capital, most handily by facilitating an increased participation in both formal and informal

activities, might improve their health. The importance of such improvements is highlighted by the independent and distinct association that seems to exist between parental social capital and children's mental health.

In a rather comprehensive analysis, children's mental health was found to be independently associated with 'only' four parental characteristics: parental status, level of emotional support, level of social capital and parental health. An independent association of commonly discussed determinants of children's mental health – sex (both parental as well as the children's), age, origin of birth, level of education, employment status, and even financial stress – could not be found in the final analysis. This might have far-reaching implications on forthcoming interventions towards children's mental health. Helping single parents increase their social capital by making it easier for them to participate in formal and informal activities might have implications for their own as well as their children's health. Another possible pathway in order to decrease health inequities in children and adolescents would be by lessening the 'financial stress' and facilitate access to social support and social capital for single parents and hence improve both children's mental health and parental health.

It appears that the Swedish health care system is not adapted to provide for the as yet unmet needs of a large proportion of the population and that this raises concerns about equity. This is expressed partly by the large share of people that refrain from medical care despite a perceived need thereof and partly by the outspoken lack of confidence in the medical services that was stated as the primary reason for refraining from seeking medical care. Not to mention that infinite availability was the second most common stated reason to why these respondents refrained. At least some of the poorer health that was found among single parents is congruent with how theories about social determinants of health explain health inequalities, with subsequent psychological mechanisms that influence health. Some of the perceived ill-health among single parents will thereby present itself as symptoms such as insomnia, depression, difficulty concentrating and exhaustion, symptoms found to be present to a greater extent among those that refrained from seeking medical care. It will then come as no surprise that single mothers are over-represented among those who refrain from seeing a doctor despite a perceived need to do so. Adjusting the health care system to assure that these symptoms and the underlying causes are properly addressed may not only be in line with the new public health policy, but indeed improve parental health.

It may also be clearly stated that financial status has a major impact on both health and health care utilization, in addition to being distributed in a profoundly uneven manner. This particular characteristic is also rather accessible to alteration, for example through financial transfers between

groups in society. The impact of low financial status may also be lessened by reducing access fees to health care establishments or by strengthening other characteristics such as social capital and social support, which might balance the impact that low financial status has on health.

9.4 Methodological considerations and limitations

As for most studies that are based on data gathered from a postal questionnaire, the results have to be interpreted cautiously due to the relatively large share of non-respondents. The response rate was 66 and 64 percent in PQ I and PQ II, respectively. Non-responders were more often of non-Swedish origin (PQ I and PQ II), men (PQ I and PQ II), tended to have lower incomes (PQ II) and were under the age of 34 (PQ I). This may lead to potential selection bias and potential confounding effects.

With regard to selection bias it may be argued that missing information on those with the lowest income might indeed underestimate the association between financial status and health, since there is such an overwhelmingly robust connection between these two in epidemiological studies. Furthermore, due to the similarities in distribution with regard to basic characteristics of single and couple parents in our study in comparison with recent national statistics (60) and studies (14), there is reason to believe that our sample is representative.

With regard to confounding effects it might be stated that the multivariate logistic regression analyses that were conducted in papers II, III and IV adjust for several possible confounders. Age is included and adjusted for in each multivariate logistic regression analysis, and several possible socio-demographic and socio-economic confounders are included in the fully adjusted analysis.

The variable that was chosen to function as a proxy for financial status or financial stress was “Have you been worried about your personal finances the last three months?” and it was chosen partly by its correlation with self-rated health. This might raise methodological considerations, but since all but one included questions regarding financial status were closely correlated with each other, and they all correlated with self-rated health, it seemed reasonable to choose the very one with the highest correlation with self-rated health. Another reason for choosing this variable was that we wanted a variable that reflected the respondent’s net financial status. The one variable that did not correlate with the other variables concerning personal finances was total annual income, indicating that these other variables also comprise expenses and outgoings.

All four papers included in this thesis are cross-sectional, meaning that possible causal pathways underlying associations found between health/health care utilization and investigated variables may indeed have a different direction than what has been assumed in the discussion above; reversed causation. There is, for example, reason to believe that having non-good health would lead to a decline in participating in any sort of social and civic activity. Not only is single parent family status a significant predictor for the mental health status of the family's children, parental family status may also be negatively affected by children's mental health (188).

There is also another problem that needs to be addressed; the cut-off for having a 'high participation' was that the respondent had to participate in four or more activities. However, several of these activities might be much easier to attend to if you live in a city. As a consequence, people living in more rural areas might be classified as "low participators" even though they are fully integrated members of the community in which they live.

Finally, since prior research has shown interaction between collective and individual social capital (29, 189) consideration may need to be taken when evaluating our findings and we may limit the interpretation of our findings to the national arena where the investigation was done.

9.5 Conclusions

On an individual level, *social capital* has as robust an association with self-rated health as any traditional social determinant of health. There is still an avid debate regarding the use of social capital as a plausible variable with regard to individual health, considering the well-known health implications that social networks and social support have. However, social capital, defined as civic and social participation and trust, is a separate entity from social networks and social support, under the presumption that there indeed is a mutual influence between participation and trust. Not being included in formal and informal civic and social activities influences generalized trust and might be considered as measurements of marginalization or social exclusion. Since social capital is unevenly distributed between single and couple mothers, not so between single and couple fathers, this might contribute to the unequal health between single and couple mothers.

Furthermore, parental social capital has an independent and utterly strong association with children's mental health. This further accentuates the significance of social capital as a determinant of health, although the specific mechanism for this latter association needs much more research.

The health of *single fathers* is as poor compared to their married/cohabiting counterparts as that of single mothers. That single fathers are better endowed with socioeconomic resources than single mothers might not be as strong a shield against ill health as might be expected. This could be due to the fact that self-rated health measures an individual's perception of his own health, and there is reason to believe that age-referential health might be closely related to the health effects of relative deprivation. The financial advantage of single fathers might however have an impact on their medical care utilization, since they seemingly seek and consume health care to an extent that matches their poorer health. Ultimately this would lead to a better health, provided that they get medical care in line with their needs. However, with regard to previous studies concerning single fathers and morbidity/mortality, this might not be the case.

Single mothers have both poorer health than couple mothers, but also refrain from medical care to a greater extent. Both poor health and inadequate medical care are associated with such socio-demographic and socio-economic characteristics that single mothers are less endowed with than couple mothers. Furthermore, emotional social support and social capital were found to be unevenly distributed to the disadvantage of single mothers, and both these variables were associated with health. Even though Swedish single mothers have a relatively good financial situation, probably due to a relatively large share of single mothers that work, the conclusion must be that there is not only an unequal, but an inequitable distribution of health and health care between single and couple mothers.

Children living in single-parent families are possibly at higher risk of developing behavioural and emotional problems than children from two-parent families, including reconstituted families. This possible association persists, even after being adjusted for by parental health, limited social support and level of social capital, features that are independently associated with poor mental health in children and with single parenthood in our study. The uneven distribution of all investigated determinants of health with regard to the associations between parental characteristics and children's mental health gives us reason to conclude that our findings indeed raise concerns about equity. Efforts to decrease health inequalities/inequities among children and adolescents could be expected to target 'financial stress' and to facilitate access to social support and social capital for single parents, thereby possibly improving both parental health and children's mental health.

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11. Summary in Swedish

Målen med denna avhandling var att studera hälsa och vårdutnyttjande hos ensamstående föräldrar och deras barn för att kunna dra slutsatser om eventuella ojämlikheter visavi gifta och sammanboende föräldrar och deras barn. Jag har också studerat om konceptet socialt kapital ytterligare kan förklara eventuella hälsoskillnader mellan dessa undersökta grupper.

De data som ligger till grund för avhandlingen har sitt ursprung i två stycken postenkäter som distribuerats nationellt under åren 2001 och 2003. Urval och bearbetning har skett i samarbete med SCB, Statistiska centralbyrån.

I de studier som ligger till grund för avhandlingen har jag kunnat visa att både ensamstående fäder och ensamstående mödrar hade sämre självskattad hälsa än gifta/sammanboende mödrar och fäder. Det fanns dock skillnader mellan ensamstående fäder och ensamstående mödrar när det gäller vårdutnyttjande. Ensamstående fäder sökte läkarvård i högre utsträckning än gifta/sammanboende fäder. Ensamstående och gifta/sammanboende mödrar hade lika högt vårdutnyttjande, men ensamstående mödrar avstod i mycket högre utsträckning från läkarbesök som de upplevde att de hade behov av än gifta/sammanboende mödrar.

Socialt kapital, deltagande i samhällliga och sociala sammankomster och tillit till andra människor, var ojämnt fördelat mellan ensamstående och gifta/sammanboende mödrar, medan det var jämnt fördelat mellan ensamstående och gifta/sammanboende fäder. Lågt socialt kapital, både deltagande och tillit, korrelerade starkt till dålig självskattad hälsa. Detta även efter det att analyserna hade justerats med avseende på ett stort antal sociodemografiska och socioekonomiska faktorer.

I en fullt justerad multivariat logistisk regressionsanalys, i vilken ett stort antal sociodemografiska och socioekonomiska variabler ingick, kvarstod fyra föräldrakarakteristika vilka självständigt korrelerade till mental ohälsa hos barn. Det var; att vara ensamstående förälder, lågt socialt emotionellt stöd, dålig självskattad hälsa och lågt socialt kapital. Mental ohälsa hos barn korrelerade inte med ålder eller kön hos barnet eller hos föräldrarna.

Ungefär hälften av befolkningen har varit i kontakt med läkare med anledning av sin hälsa de senaste tre månaderna, antingen genom ett läkarbesök eller genom ett telefonsamtal. Kvinnor och invandrare var i

kontakt med läkare i högre utsträckning än män och infödda svenskar. Andelen i befolkningen som avstod från att söka läkarvård, trots ett upplevt behov att ett sådant, var 24 procent. Kvinnor, invandrare och de med endast grundskoleutbildning avstod i högre utsträckning än män, infödda svenskar och de med gymnasie- eller högskoleutbildning. Vanligaste uppgivna anledningarna till varför man avstod från läkarbesök anknöt till bristande tilltro till läkarna/vården, bristande tillgänglighet och dålig ekonomi. De symptom som var förknippade med beslutet att avstå från ett läkarbesök var; överansträngning, depressionssymptom, stresssymptom, trötthet och koncentrationssvårigheter.

Ensamstående faders hälsa är dålig i jämförelse med gifta/sammanboende faders, i samma relation som ensamstående mödrars hälsa är dålig i förhållande till gifta/sammanboende mödrar. Att ensamstående fäder generellt har en bättre socioekonomisk situation tycks inte vara ett skydd mot dålig hälsa. Detta skulle kunna grunda sig på att det inte i huvudsak är en absolut brist på socioekonomiska resurser som styr sambandet mellan socioekonomisk position och hälsa utan snarare den relativa bristen på resurser. Den bättre socioekonomiska situationen tycks istället påverka vårdutnyttjandet, som synes bättre möta deras upplevda vårdbehov i jämförelse med ensamstående mödrars vårdutnyttjande.

Ensamstående mödrar har både sämre hälsa och ett mindre adekvat vårdutnyttjande än gifta/sammanboende mödrar. Både hälsa och vårdutnyttjande korrelerar starkt till sociodemografiska och socioekonomiska faktorer och ensamstående mödrar har i mina studier ett betydligt sämre utgångsläge än gifta/sammanboende mödrar med avseende på alla undersökta sådana faktorer. Även med avseende på socialt stöd och socialt kapital är de ensamstående mödrarna starkt förfördelade.

Det pågår en livlig diskussion i vetenskapssamhället huruvida socialt kapital kan/skall ses som en individuell resurs överhuvudtaget. Detta eftersom det redan finns andra närliggande faktorer, främst socialt nätverk och socialt stöd, som har erkända hälsoimplikationer på individnivå. Definierat som deltagande i samhälleliga och sociala aktiviteter och tillit, har socialt kapital i mina studier en påtaglig korrelation med hälsa på individnivå. Den kan inte ses som helt självständig från sociala nätverk, eftersom detta får anses vara en omistlig del av socialt kapital, men ändå som en separat entitet. Detta i synnerhet om vi utgår ifrån att det föreligger en ömsesidig påverkan mellan samhälleligt deltagande och tillit, vilket i sig ligger uttalat i definitionen av socialt kapital. Socialt kapital får anses vara helt skilt från socialt stöd, såväl emotionellt som instrumentellt. Givet denna starka korrelation mellan lågt socialt kapital och dålig hälsa, borde åtgärder som underlättar för ensamstående föräldrar (eller annan förfördelad grupp i samhället) att stärka sitt sociala kapital att ha goda möjligheter att på sikt förbättra deras

hälsoläge. Det synes även som att ett högre socialt kapital hos ensamstående föräldrar skulle kunna ha positiva konsekvenser för deras barns psykiska hälsa. Ett möjligt sätt för samhället att stärka det sociala kapitalet skulle vara att underlätta eller på annat sätt skapa starka incitament för ensamstående föräldrar att öka sitt deltagande i samhällsliga och sociala aktiviteter. Det måste också poängteras att bristfällig ekonomi hade en tydlig korrelation med hälsa och vårdutnyttjande. Just denna faktor är tämligen lätt att påverka, exempelvis genom finansiella transfereringar mellan grupper i samhället.

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