Adolescent self-reported health in the Umeå region

Associations with behavioral, parental and school factors

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List of original articles

This thesis is based on the following articles:

Article I


Article II


Article III


Article IV

Abstract

This thesis consists of a quantitative and a qualitative study. The **quantitative study** (articles I-III) aimed to examine how self-reported health in adolescence is associated with behavioral, parental, and school factors. Through a survey directed at all adolescents in grades 7–9, data were collected in 2005 in a region in northern Sweden (n=5060). Statistical methods were used to analyze the survey data: chi² tests, multivariate logistic regressions and multilevel logistic regressions. Results showed that even though most adolescents reported good health, there were also rather large proportions of adolescents who reported headaches, stomach aches and feelings of stress. Girls reported poor health to a higher extent than boys, a difference that was larger in grade 9 than in grade 7. The results also showed that being norm compliant was associated with good self-reported health. Furthermore, perceiving relations and communication with parents as poor was associated with poor self-reported health; however, this relationship could not explain gender differences in self-reported health. Continuing on, analyses showed that there exist greater variations in self-reported health between students (within a school) than between different schools. On an individual level, poor relations to teachers, bullying and truancy were associated with poor general health. The **qualitative study** (article IV) sought to examine barriers to and facilitators of utilization of local school survey results within a school setting. In 2011, 21 school district managers and principals within a Swedish municipality were interviewed. Analyses were performed using a qualitative content analysis. The results from the qualitative study showed that the dissemination and utilization of school survey results appeared as two interrelated phases in one process. Barriers and facilitators differed qualitatively depending on the phase, dissemination or utilization.

In conclusion, professionals as well as researchers need to consider the complexity of adolescent health and its social determinants. Adolescent health is a concern for multiple sectors in society, which highlights the need for further development of collaborations between professionals in relevant fields, such as health care, school and social services.

**Keywords:** adolescence; school survey; self-reported health; somatic complaints; stress; norm compliance; parent-adolescent relations; compulsory school; school managers; research utilization
Svensk sammanfattning

**Titel:** Självrapporterad hälsa hos ungdomar i Umeåregionen, och dess samband med normrelaterat beteende samt med föräldra- och skolfaktorer.


Syftet med den **kvalitativa studien** (artikel IV) var att undersöka vilka faktorer inom skolan som möjliggör och som utgör barriärer för användningen av enkätsresultaten från en lokal skolenkät. 2011 genomfördes 21 intervjuer med skolområdeschefer och rektorer inom en kommun i Sverige. Analyser av intervjuematerialet genomfördes med hjälp av kvalitativ innehållsanalys. Resultaten från denna studie visade att spridningen och användningen av resultaten från skolenkätten kan beskrivas som två relaterade faser i en process. De faktorer som underlättrade samt utgjorde barriärer för spridningen och användningen av enkätsresultaten var kvalitativt olika varandra beroende på vilken fas i processen respondenterna hänvisade till.

Dessa resultat illustrerar den mångfacetterade komplexitet som inryms i ungdomars hälsa och dess sociala determinanter, en komplexitet som både forskare och professionella behöver ta hänsyn till. Ungdomars hälsa anger ett flertal samhällssektorer, vilket visar på betydelsen av en fortsatt
utveckling av samverkan mellan professionella inom exempelvis hälso- och sjukvården, skolan och socialtjänsten.

**Nyckelord:** ungdomar; skolenkät; självrapporterad hälsa; somatiska besvär; stress; normfölj samhet; föräldrarelationer; skola; skolområdeschefer; forskningsanvändning
# Thesis in a glance

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<td>To examine the hierarchical structure of students’ self-reported health. Also, to examine what factors within schools’ structural and social environment are associated with self-reported health, both from an individual- and a school-level perspective.</td>
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| **Quantitative study. Cross-sectional data from 2005. Grades 7-9 in compulsory school. 5060 respondents (85%).** | For boys and girls, perceiving a poor relationship with parents increased the odds ratio of poor self-reported health. Relations with parents could not explain gender differences in self-reported health. |
| Logistic regressions. | |

| **Quantitative study. Cross-sectional data from 2005. Grades 7-9 in compulsory school. 4972 respondents (85%) from 20 schools. Structural information (i.e. student-teacher ratio) was collected from Statistics Sweden.** | Almost all variance in self-reported health was accounted for on an individual level. Poor relations to teachers, bullying and truancy were associated with poor general health, on an individual level. Most school-level variables were not significantly associated with students’ self-reported health. |
| Multilevel logistic regressions. | |

| **Qualitative study. Interview data from 2011. Twenty-one school district managers and principals were interviewed.** | The dissemination and utilization of school survey results appeared as two interrelated phases in one process. Barriers and facilitators differed qualitatively depending on the phase, dissemination or utilization. |
| Qualitative content analysis. | |
Introduction

The health of adolescents has received much attention in Sweden as well as in other parts of the world. Politicians, the media, and researchers have looked at and studied adolescent health from various perspectives. In the last few decades, headlines, reports and research findings have surfaced, usually focusing on adolescents’ health problems (Beckman & Hagquist, 2010). This concentration occurs despite that, from a life course perspective, adolescent health is rather good in Sweden and in other parts of the world. More specifically; compared with other age groups, adolescents are doing well, both from a mortality and morbidity perspective (Gore, et al., 2011; Public Health Report, 2009). However, research also shows that adolescent health needs global attention (Gore, et al., 2011; Kleinert, 2007). In Sweden, some researchers argue that adolescent health is declining (Petersen, et al., 2010; Public Health Report, 2009), although this assertion is sometimes contested (Petersen, et al., 2010). In addition, there are striking differences in health between boys and girls across the globe and in Sweden, for reasons not yet resolved (Currie, et al., 2008; Petersen, et al., 2010; Viner, et al., 2011).

Studying adolescent health is challenging because it is such a complex phenomenon; it may be thought of as a large puzzle consisting of many pieces. Adolescent health has been studied from the perspective of the individual, the family, and from a community/societal perspective. Although most researchers try to understand poor adolescent health, there are also researchers who try to understand the factors influencing good health, for example, from the perspective of resilience (Flynn, Ghazal, Legault, Vandermeulen, & Petrick, 2004; Ungar, 2008). Despite these efforts, there is still a great deal of research needed. In this thesis, I have focused on some of the pieces in this puzzle, namely behavioral, parental and school factors. These factors are all thought to be of importance in self-reported health. By studying these factors, I attempted to further elaborate on the knowledge of adolescent health. Below, these factors are introduced briefly.

Within each society, there are norms thought to influence people’s behavior. For example, research shows that adolescent smoking behavior is affected positively by parental and peer disapproval regarding smoking (Wiium, Torsheim, & Wold, 2006). Norms differ between different times in history and between different population groups. Some norms can be considered to hold a societal point of view. For example, there are societal norms, some even regulated by law, which aim to reduce adolescent use of tobacco, alcohol and narcotics. Adolescent research shows that engaging in norm-breaking behavior is associated negatively with self-reported health (Hoel, Eriksen, Breidablik, & Meland, 2004; Ritakallio, Kaltiala-Heino, Kivivuori, & Rimpela, 2005). However, being compliant to dominant norms
is not automatically associated with good health. The demand for norm compliance implies a stress that could make the health of a person worse (Gillander Gådin & Hammarström, 2003; Landstedt, Asplund, & Gillander Gådin, 2009). Adolescents testify that demands from parents, teachers and the self relate to stress and poor health (Murberg & Bru, 2004). In this thesis, I have examined self-reported health in relation to behaviors that can be labeled as indicators of norm compliance.

Each adolescent lives in a specific context; this environmental context both influences and is influenced by the adolescent. In adolescence, relations with parents continue to be of importance (van Wel, Linssen, & Abma, 2000), although relationships with peers become more influential, which is part of the process towards independence (Scholte & van Aken, 2008). Relations with others influence the health of adolescents. For example, adolescents who report having low quality relationships with their parents also report higher levels of poor emotional health (Ackard, Neumark-Sztainer, Story, & Perry, 2006).

School generally is considered to be an environment of potential importance to adolescents. Apart from being a working environment, school is also a social arena in which adolescents interact with peers and adults. A school consists of structural factors (for example its size) as well as the relations formed within the school. According to previous research, school factors, such as adolescents’ relationship with teachers and bullying are associated with self-reported health (Hjern, Alfven, & Östberg, 2008). Furthermore, the quality of schools is associated with both health and academic achievement outcomes (Opdenakker & Van Damme, 2000; Sellström & Bremberg, 2006).

To conclude, it appears that behavioral, parental and school factors are all important to study in relation to adolescent health; however, it is also clear that not all pieces of the puzzle have become visible (Petersen, et al., 2010). In this thesis, I have attempted to extend the knowledge on adolescent self-reported health and its determinants. This research is potentially important for the prevention of poor health as well as for health promotion interventions directed towards adolescents. In turn, such interventions are thought to provide conditions for a positive health development in adolescence. In Sweden, school, social, and health authorities share a responsibility to improve poor adolescent health at the local level. Surveying adolescents on their health has become a common way to gather knowledge for local interventions. Of course, one objective is to utilize the knowledge produced. In Sweden, little is known regarding how results from local school surveys are used. Thus, this thesis has aimed to gain knowledge on the utilization process that takes place after survey data have been collected regarding the living habits of adolescents.
Aims

The overall aim of this thesis is to examine how self-reported health is associated with behavioral, parental and school factors. Gender differences in these associations are also examined. Another objective is to examine the dissemination and utilization process of a local Swedish school survey on health and living habits within a school context. The following questions are addressed:

- With regard to norm compliance, what are the differences between those with good self-reported health and those with poor self-reported health? Furthermore, what are the differences between boys and girls in these associations? (Article I)

- Does extremely high norm compliance reveal any particular self-reported health patterns for boys and girls? (Article I)

- How do parent-adolescent relations associate with self-reported health, in terms of general health, somatic complaints and stress symptoms? Furthermore, do these associations differ between boys and girls? (Article II)

- Are there any structural differences between schools regarding adolescents’ self-reported health? (Article III)

- From an individual- and school-level perspective, what factors within schools’ structural and social environment are associated with self-reported health? (Article III)

- What are the barriers to and facilitators of disseminating and utilizing the results of a local Swedish school survey? (Article IV)
Adolescence

Adolescence has several similar yet different definitions. Sometimes adolescence is defined by age, such as between ages 12 and 18 (von Tetzchner, 2005). Another rather pragmatic definition by Rew (2003), describes adolescence as the second decade in life. Other researchers have extended the definition of adolescence to include the early twenties as well (Hjern, 2006; SOU, 2006:77). In adolescence, multiple changes occur on a biological, social, and psychological level. Because this period in life is so marked by change, many researchers feel that it is necessary to further divide adolescence into early, middle and late adolescence (Rew, 2005; Steinberg, 2011).

The Swedish National Encyclopedia defines adolescence as the period in life between puberty and adulthood ("adolescens," 2012). Similar to the encyclopedic definition, other researchers have chosen to include puberty into the definition of adolescence (Gossens, 2008). The definition that includes puberty does not put any age limit on adolescence, since the onset of puberty differs between genders and between individuals (Frisén, 2006). Seeing adolescence as a phase in life between childhood and adulthood offers a more flexible view on adolescence than imposing more strict age limits; such a view allows adolescence to be defined by physiological, psychological, social, cultural or historical criteria.

In this thesis, the respondents from the quantitative study were between 12 and 15 years old, since the target group of the school survey was students from grades 7-9 in the Swedish compulsory school. With these age boundaries, I have chosen to categorize the respondents as being in adolescence or more specifically, early adolescence, a categorization that is common practice in research on adolescents. I did not have access to data on the respondents’ pubertal status, which limited my ability to use another definition of adolescence. Data on pubertal status potentially could have been interesting, because research shows that pubertal status is associated with self-reported depression (Angold, Costello, & Worthman, 1998). From a methodological perspective, collecting data on pubertal status is problematic when using a survey; however, it most likely would have placed some of the respondents as children and others as adolescents, since the onset of puberty most often occurs in this age span (Frisén, 2006).

In this thesis, the respondents of the survey are referred to as respondents in the method section; otherwise, they are referred to as adolescents or students.
Health

There exist various definitions of health. In its constitution, the World Health Organization (WHO) states that health is “a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity” (WHO, 1948). The WHO definition is interesting and important because it equates health to more than the absence of disease. It includes the concept of well-being, which means that a person can have a disease and still consider him/herself to be in good health and vice versa. Several researchers have displayed models to illustrate the concept of health entailing two dimensions (Eriksson, 1984; Janlert, 2000; Jerdén, 2007), one of which is exemplified in Figure 1. These dimensions are highly likely to, but do not automatically interact (Eriksson, 1984).

![INDIVIDUAL SELF-ASSESSMENT](image)

**Figure 1.** Two dimensions of health (Jerdén, 2007).

Health can be studied through different kinds of measures. Measures of mortality (for example, unintentional injury or suicide) and morbidity (for example, mental illness or sexually transmitted disease) are often used to display population health (Rew, 2005). Also, some researchers have chosen to study health from the perspective of health behaviors, such as unhealthy eating or alcohol consumption (Rew, 2005).

When collecting data on health, both objective and subjective measures can be used. Objective measures of health include, for example, blood pressure and body mass index (BMI). A subjective measure, on the other hand, deals with an individual’s own perception of his/her health. Researchers label subjective measures of health differently; examples of labels are self-perceived, self-assessed, self-rated, or self-reported health (Bue Bjorner, et al., 1996). Subjective measures of health have the potential to cover many different health aspects, including an individual’s general health, well-being, somatic complaints, stress or long-standing illness.
In this thesis, health was measured through subjective measures; self-reports. The adolescents answered questions regarding their general health, their experiences of somatic complaints (headache and stomach ache) as well as on their experiences of stress. These self-reported health measurements are commonly used in surveys on adolescent health, both nationally and internationally. Measures of somatic complaints and stress can be considered to measure poor health rather than good health, following the WHO definition of health as entailing more than the mere absence of disease. The question on general health is different, since it is more “neutral” and entails dimensions of both good and poor health. In this thesis, I have chosen to label the absence of somatic complaints or feelings of stress as an indication of good health, since it is probable that the absence of pain or stress contributes to good health. For example, research shows that those who report good general health also report fewer somatic complaints, a finding that indicates a relationship between the absence of pain and good health (van Dijk, McGrath, Pickett, & Van Den Kerkhof, 2008).

Within research, there is growing interest in the positive side of health; research into measures of well-being (Rask, Åstedt-Kurki, Paavilainen, & Laippala, 2003) and health-related quality of life (Langeveld, Koot, & Passchier, 1999; Michel, Bisegger, Fuhr, Abel, & Kidsscreen group, 2009). These measures differ from those I have had access to and used. However, it would have been interesting to broaden the scope of this study by also exploring factors that contribute to good health while discussing similarities and differences between good and poor health. Research shows, for example, that the prevalence of somatic complaints is related to lower scores on several components of the quality of life measures (Langeveld, et al., 1999; Petersen, Hägglöf, & Bergström, 2009).

**Previous research on adolescent health**

Adolescent health is internationally monitored by organizations such as the World Health Organization (WHO) and United Nations Children’s Fund (UNICEF). A study on global health shows that 10-14-year-olds have the lowest burden of disease, when compared with younger children, older adolescents, and young adults (Gore, et al., 2011). In a comparison of different dimensions of child well-being between 21 “rich” countries in the western world, Sweden was ranked number one with regards to material well-being, health/safety, and behaviors/risks; however, Sweden was ranked number seven (out of 21) with regards to subjective well-being (UNICEF, 2007).

On a regular basis, the WHO performs a survey (Health Behavior of School Children, HBSC), which encompasses adolescents from 43 countries in Europe and North America. The most recent report from the HBSC survey
shows rather large differences in self-reported health between countries. For example, concerning 15-year-old adolescents, 50% of the girls and 24% of the boys in Ukraine report poor general health. This number can be compared with Sweden, where 19% of the girls and 13% of the boys report poor general health (Currie, et al., 2008). The HBSC survey also shows that in a majority of the countries, girls more often report poor general health and multiple health complaints when compared to boys (Currie, et al., 2008).

Even though there are differences in self-reported health between countries, research has also shown similarities in health across nations in the western world. For example, research shows a decline during adolescence across all nations in Europe regarding self-reported health and health-related quality of life (Currie, et al., 2008; Michel, et al., 2009). Furthermore, there is a corresponding increase during adolescence concerning health complaints, such as headache and stomach ache (Haugland, Wold, Stevenson, Aaroe, & Woynarowska, 2001). What is striking is that the increase of poor health from early to middle adolescence is more pronounced among girls than among boys (Haugland, et al., 2001; Sweeting & West, 2003; Torsheim, et al., 2006). Multiple studies confirm differences between boys and girls in self-reported health, both in the sense that girls show higher prevalence of poor self-reported health and that girls more often report multiple health complaints (Berntsson, Köhler, & Gustafsson, 2001; Haraldstad, Sørum, Eide, Natvig, & Helseth, 2010; Perquin, et al., 2000).

In Sweden, adolescent health is monitored on a national basis by the National Board of Health and Welfare, the National Board for Youth Affairs, Statistics Sweden and the Swedish National Institute for Public Health. These systematic efforts, together with other research, provide a rather comprehensive picture of how adolescents in Sweden are doing from a health perspective.

All in all, most adolescents in Sweden report good health (Public Health Report, 2009; Swedish National Institute of Public Health, 2011a, 2011b). Despite this fact, a substantial amount of research also shows that adolescent health is problematic, thereby following the patterns visible in international research. Girls report poor health to a higher extent than boys (Brun Sundblad, Saartok, & Engström, 2007; Petersen, et al., 2010; Public Health Report, 2009; Swedish National Institute of Public Health, 2011a; Östberg, Alfen, & Hjern, 2006). Additionally, research shows that health differences between genders increase throughout adolescence, which aligns with international research (Brun Sundblad, et al., 2007; Jerdén, Burell, Stenlund, Weinehall, & Bergström, 2011; Public Health Report, 2009; Swedish National Institute of Public Health, 2011a, 2011b).

Several studies have attempted to conclude whether or not the health of adolescents has declined over time. In 2010, the Royal Swedish Academy of
Sciences conducted a systematic literature review of the mental health of children and adolescents in Sweden, with a particular emphasis on the development of mental health between 1945-2007 (Petersen, et al., 2010). The researchers found it rather difficult to make any definite statements regarding the development of mental health among Swedish adolescents due to the quality of the studies. Nonetheless, they indicate that there has been an increase of internalized health problems for girls during the last 30 years (Petersen, et al., 2010). Other research confirms that the prevalence of health complaints has increased for adolescents in grade 9, particularly for girls, over the past 20 years (Hagquist, 2009a). The increase of adolescent health complaints seems to have ground to a halt; however, the prevalence of self-reported health complaints remain twice the size reported three decades ago (Swedish National Institute of Public Health, 2011b).

**Determinants of adolescent health**

Briefly stated, determinants of health can be described as factors that influence health (Janlert, 2000). Health determinants can be found on many different levels, from a societal to an individual level. Determinants on a societal level are often referred to as social determinants of health. The WHO, through the Commission of Social Determinants of Health (CSDH), describes social determinants of health as being a matter of resources (CSDH, 2008). In October 2011, the majority of WHO member states signed the Rio Political Declaration on Social Determinants of Health, in which the political responsibility for tackling health inequalities through social determinants of health was emphasized. As shown below, this declaration briefly summarizes the causes of health inequalities.

Health inequalities arise from the societal conditions in which people are born, live, work and age, referred to as social determinants of health. These include early years’ experience, education, economic status, employment and decent work, housing, and environment, and effective systems of preventing and treating ill health. (WHO, 2011).

The above statement takes on a broad view regarding determinants of health, saying that health is influenced by both people’s lifestyles and living conditions, such as social and economic conditions (WHO, 2011; Wilkinson & Marmot, 2003). Considering social determinants of health is relevant across the globe (CSDH, 2008; Marmot, 2005; Wilkinson & Marmot, 2003). Regarding Nordic children and adolescents, research shows that socio-economic inequalities are associated with poor health (Goodman, 1999;
Halldórsson, Kunst, Köhler, & Mackenbach, 2000). Other research shows that economic stress, as in adolescents’ perception of family cash margin, is associated with poor health (Östberg, et al., 2006). Furthermore, adolescents’ academic orientation, rather than parents education, is associated with self-reported health (Hagquist, 2006). If compared with other age periods in life, adolescence is a time in life where health inequalities due to differences in socio-economic status are relatively small (West & Sweeting, 1996, 2004). In my research, I have not looked at socio-economic inequalities in depth due to lack of relevant variables.

Instead, I have chosen to study other determinants of health: norm-related behavior, relations to parents, and life in school. Also, gender has been included, due to it being an important determinant of health (CSDH, 2008). Including several determinants of health opened up a relatively comprehensive examination of self-reported adolescent health.

The survey data used in this thesis are cross-sectional, thereby limiting the possibility of making causal statements. However, the data do permit research into associations between the determinants and health. Each determinant is a research field of its own, which separately has been explored by researchers in that field. Below, each determinant included in the thesis is briefly introduced.

**Norm-related behavior**

Rimal and Real (2003) define norms as “group identity-based codes of conduct that are understood and disseminated through social interaction” (p. 185). Another definition, by Wiium et al. (2006), describes norms as “shared expectations of what is and what ought to be” (p. 1812). This definition differentiates between what other researchers label as descriptive and injunctive norms (Cialdini, Reno, & Kallgren, 1990; Rimal & Real, 2003). Descriptive norms refer to the commonality of a certain behavior, or rather, how typical the individual perceives the behavior to be. On the other hand, injunctive norms (or subjective norms as they are sometimes called), refer to how much pressure an individual feels to engage in that behavior (Rimal & Real, 2003; Rivis & Sheeran, 2003), or what is approved of morally or not (Cialdini, et al., 1990). For example, one study shows that adolescents who experience societal disapproval of adolescent alcohol consumption (injunctive norm), while perceiving that most of their peers drink alcohol (descriptive norm), that increases the likelihood that these adolescents will consume alcohol themselves (Rimal & Real, 2003).

Norms are thought to affect on individuals’ behavior, by letting them know what actions are appropriate in particular situations. Behavior is also influenced through possible sanctions for norm-breaking behavior (Baier & Svensson, 2009). A research review shows that both descriptive and
Injunctive norms are significant predictors of behaviors such as drinking alcohol and exercising (Rivis & Sheeran, 2003). In addition, injunctive norms on smoking are associated with adolescent smoking behavior (Nilsson, Weinohall, Bergström, Stenlund, & Janlert, 2009; Wiium, et al., 2006). The boundaries surrounding norm-related behavior, i.e. what is considered norm compliant or norm-breaking behavior, are decided culturally as well as legally. For example, apart from some societal norms being enforced by laws (for example against using narcotics), norms are also affected by the media, music, and movies (Lalander, 2004).

Many norm-breaking behaviors have their onset in early adolescence. For example, most adolescents in Sweden who have used narcotics, used for the first time when they were 14-15 years old (Swedish Council for Information on Alcohol and Other Drugs, 2009). The prevalence of norm-breaking behaviors peaks in middle or late adolescence, after which it starts to decline for most people (Moffitt, 1993). There are those who claim that norm-breaking behavior is a natural part of adolescent development, as a way of gaining independence towards parents and society. Research shows that many adolescents who engage in norm-breaking behavior do grow up to become well-functioning and healthy adults (Moffitt, 1993). However, norm-breaking behavior in adolescence can for others have continuing consequences in adult life, particularly for those who engage in norm-breaking behavior at a very young age (Andershed & Andershed, 2005; Moffitt, 1993). Norm-breaking behavior in early adolescence is also negatively associated with health (Boyce, Davies, Gallupe, & Shelley, 2008; Ritakallio, et al., 2005). For example, poorer health is related to bullying behavior (Meland, Rydning, Lobben, Breidablik, & Ekeland, 2010) and to alcohol use (Hoel, et al., 2004).

Norm-breaking behavior is not necessarily the same for boys and girls. Research on Swedish child welfare in the 20th century shows that girls are more quickly judged as breaking norms than boys (Hamreby, 2003). Nonetheless, research shows that boys engage in norm-breaking behavior to a larger extent than girls (El-Khoury, Sundell, & Strandberg, 2005; Lalander, 2004). Similarities between boys and girls have also been found, for example, in research on risk factors for norm-breaking behavior (El-Khoury, et al., 2005). Gender researchers have problematized the concept of norms, by displaying its complexity between and within genders. Norms may vary between boys and girls but also between different groups within each gender (Ambjörnsson, 2004); such variation is related to inequalities in power distributions as well as inequalities in health (Gillander Gådin, 2002).

Behaviors that are considered norm-breaking or norm compliant change over time and between different groups within a society. As a consequence, adolescents may experience conflicting norms. Adolescents have to relate to norms from the adult world as well as the growing strength of norms formed
within peer groups (Scholte & van Aken, 2008). For example, from a societal perspective, adolescents who drink alcohol are considered to engage in norm-breaking behavior. However, for the adolescent, drinking alcohol may be regarded as norm compliant behavior if peer norms are considered (Swedish National Council for Crime Prevention, 2003).

Several researchers have attempted to explain poor health from a sociological perspective. Sometimes, this research takes concepts like globalization and individualization, which are very western, as points of departure (Giddens, 2001). A globalised world affects individuals on a daily basis, and these effects are characterized by the freedom to choose how to live. This freedom also imposes greater individual responsibility to do well. For example, health is seen as an individual project, thereby putting much emphasis on the power of the individual in the creation of good or poor health (Beck & Beck-Gernsheim, 2001; Wiklund, Bengs, Malmgren-Olsson, & Öhman, 2010). Interviews with Swedish adolescents show that they experience great liberty of choice concerning their lives (SOU, 2006:77). According to the adolescents, they considered such choice positive but it was also a source of conflicting demands, stress and poor mental health. In the same report, it is argued that this societal development has caused a gap between adolescents’ expectations of what they can do and what is actually possible to do. Wiklund et al. (2010) also made use of these perspectives, by identifying “stressors of modernity” in the lives of adolescents and young women (p. 1569). The authors described how girls and young women feel pressure to choose, to perform and to be perfect. The development towards an individualized society is also confirmed in a report by the Swedish National Agency for Education, implying greater individual responsibility for their own learning in school (Swedish National Agency for Education, 2009).

In this thesis, I studied behaviors that are indicators of contemporary societal norms. The behaviors that were included are as follows: eating breakfast, exercising, not bullying others, not playing truant, not committing a crime, and not using tobacco, alcohol or narcotics. In my opinion, these behaviors are indicators of some of the societal norms directed towards adolescents in Sweden today, by telling adolescents that it is good to exercise and eat breakfast regularly and that it is bad to smoke, drink alcohol or bully others. I study these behaviors with an assumption that adolescents engage (or not) in such behaviors partly due to them being subjected to social expectations and pressure; these expectations may be conflicting, coming from society, set up by the adult world, or from their peers. These behaviors may in turn affect their health as well as the other way around.

I chose to focus on societal norms rather than norms set among adolescent groups mainly due to the age of the adolescents under study. For example, it is illegal and therefore norm-breaking for 12-15 year-olds to buy alcohol and to use narcotics. The behaviors under study are similar in a
sense that they can be considered indicators of societal norms; however, they also differ. For example, committing a crime probably has far different consequences than not exercising or not eating breakfast. In that sense, adolescents may consider these norms more or less “powerful” since they are associated with different sanctions (Baier & Svensson, 2009). They are also upheld by different (and sometimes multiple) structures in society, whether it is the peer group, adults in school, parents, or the police. My main focus in the present study was whether or not adolescents comply with norms by engaging (or not) in these behaviors and how that associates with self-reported health. It has not been my focus to compare behaviors against each other, and I have therefore chosen not to grade or weight them differently depending on their different qualities (which methodologically is very difficult to do).

In article I, I refer to norm compliant behavior. The idea was to explore if being “too” compliant to norms (as well as breaking norms) could be associated with poor self-reported health. Being too norm compliant, then, may affect health through high pressure and the stress of always doing “the right thing”, as shown in previous research (Wiklund, et al., 2010). Norm compliance generally is defined as a negation of norm-breaking or deviant behavior (Arnett, 2001), which is the perspective I have chosen to take in the present research. For example, if an adolescent has used narcotics, he/she is breaking that norm, and if not, he/she is compliant to that norm. From a different perspective, norm compliance and norm-breaking behavior may entail different inherent qualities and explanations; however it has not been within the scope of this research to explore such differences.

**Relations to parents**

Research on the family environment covers many different aspects, from family structure, family conflict to the material state of a family (Sandefur & Meier, 2008). The quality of parent-adolescent relations has also been the focus of many studies. Most adolescents experience good and stable relations with their parents during adolescence (Currie, et al., 2008; van Wel, et al., 2000). In Sweden, most children (80%) are satisfied with their situation at home, although that satisfaction decreases between grade 6 and grade 9 in compulsory school (Swedish National Institute of Public Health, 2011a).

Parenting can be divided into two domains, a relational side and a regulatory-supervisory side (Kerr & Stattin, 2003). On the relational side, strong relations and good communication with a parent are ascribed to reduce norm-breaking behavior (Shuli, et al., 2006; Sokol-Katz & Dunham, 1997). On the regulatory-supervisory side, parental monitoring - described as a parent who knows about their adolescent’s whereabouts and activities - is thought to have a positive effect on the deviant behavior of their
adolescent. The division of parenting into a relational and a regulatory-supervisory side is related to a large and influential body of research on parenting styles (Baumrind, 1991; Maccoby & Martin, 1983). Research on parenting styles often makes a similar two-folded division of parenting domains, namely responsiveness and demandingness. Out of these domains, parenting typologies have emerged, which in turn have been studied from a health perspective. Research shows that an authoritative parenting style, in which a parent can be described as warm, accepting, nurturing yet able to form age-appropriate demands, rendered positive results on their adolescent’s health as well as norm-breaking behavior (Newman, Harrison, Dashiff, & Davies, 2008). In contrast, a permissive parenting style, in which parents score high on responsiveness but exert low levels of control, rendered higher proportions of poor adolescent health when compared with other parenting styles (Newman, et al., 2008; Wing Chan & Koo, 2011).

Research on associations between parent-adolescent relations and self-reported health focuses on factors associated with both good and poor health. A WHO report shows that having positive relations with parents is a protective factor for depression across the globe (WHO, 2010). Other research shows similar results, where positive communication with both parents is associated with good self-reported health (Pedersen, Granado Alcón, & Moreno Rodriguez, 2004). On the other hand, having poor/strained relations or poor communication with parents increases the risk of reporting poor health (Brolin Låftman & Östberg, 2006; Scaramella, Conger, & Simons, 1999; Swedish National Institute of Public Health, 2011a; WHO, 2010). Moreover, low levels of caring are associated with depression and low self-esteem (Ackard, et al., 2006). However, it must be noted that there is research that shows contradictory results, namely that relations to parents are not associated with adolescent well-being (Lindberg & Swanberg, 2006).

Demands from parents are usually considered to have a positive effect on the lives of adolescents, as shown by research on parenting styles, for instance (Newman, et al., 2008). However, there is research that shows that too many demands can lead to poor health. Parental and teacher pressure on school performance are associated with poor self-reported health (SOU, 2010:80; Stoeber & Rambow, 2007). Not only do adolescents experience high demands from their teachers but also from their parents, especially in regards to their performance at school (Levine, 2006; National Board of Health and Welfare, 2006).

Girls and boys may not experience relations with their parents in the same way. Having strong parental bonds give positive effects on adolescents’ well-being, regardless of gender; however, the connection is stronger for girls than for boys (van Wel, et al., 2000).

Researchers theorize about the mechanisms behind the associations between parent-adolescent relations and adolescent health in different ways.
Repetti, Taylor and Seeman (2002) have developed a model of “risky” families. In this model, they display the complexity of the relationship, longitudinally, between the family social context and poor health in adolescence and adulthood. Individual factors as well as relational factors are considered in this model. Having a risky family environment may have an effect on adolescent health through biological, emotional, social and behavioral processes (Repetti, Taylor, & Seeman, 2002). Other researchers have considered another sort of mechanism, where parents have a buffering effect, through which they may mediate other stressors in adolescents’ lives (Stansfield, 2006). To summarize, parents are thought to have either a direct or an indirect effect on adolescent health, by mechanisms that are both complex and multi-faceted.

Most research on parent-adolescent relations has had a unidirectional focus; to put it simply, parents affect adolescents. This focus, for example, is shown in the theoretical model by Repetti et al. (2002). There is growing awareness in research about the bidirectional links between parent-adolescent relations and health, thereby acknowledging adolescents’ influence on the relationship (Boutelle, Eisenberg, Gregory, & Neumark-Sztainer, 2009; Buist, Dekovic, Meeus, & van Aken, 2004; Lila, van Aken, Musitu, & Buelga, 2008). One longitudinal study even shows adolescent health affecting parenting and not the other way around (Reitz, Dekovic, Meijer, & Engels, 2006).

There is an increasing diversity of family types in society today, even though most adolescents in Sweden still report living with both of their parents (Swedish National Institute of Public Health, 2011b). This diversity may lead adolescents to have several influential parental figures in their lives, whether or not they live in two family environments, for example. Also, there is a possibility that adolescents grow up with only one parent available. Research on Swedish adolescents shows that boys, but not girls, living in single-parent households report poorer health compared with those living in dual-parent households (Pedersen, et al., 2004).

In adolescents’ immediate environment, they interact not only with their parents but also with their peers. Researchers have argued that in adolescence, peers are growing even more important to adolescents, thereby downplaying the influence of parents (Harris & Cavanagh, 2008). Other researchers have focused on the complementary or interrelated effect of these relations, where peers and parents fulfill different social needs in adolescence or when parental relationships provide models the way for up-and-coming peer relationships (Scholte & van Aken, 2008).

To summarize, the parent-adolescent relation has been viewed from different perspectives, such as parental bonding (van Wel, et al., 2000), parental styles (Newman, et al., 2008) and the actual interaction between the adolescent and the parent (Brolin Låftman & Östberg, 2006). It remains
safe to say that the family environment is considered critical for children with regards to their well-being and other outcomes (Sandefur & Meier, 2008).

**Life in school**

School is an important environment for adolescents. School is their working environment where they spend many hours each day. Apart from doing schoolwork, adolescents also form and foster relationships with peers and teachers during their time in school. From a health perspective, school is important partly because it is an environment that may influence health and because it is an arena for possible health promotion interventions. Although not the main objective for schools in Sweden, health is highlighted as an important task for schools, both in the Education Act (SFS, 2010:800) and the Swedish national curriculum (Swedish National Agency for Education, 2011). These documents state that schools have an obligation to see to the health of their students. Moreover, health promoting activities within schools are beneficial for practical reasons, simply because the school environment offers an easy way to reach the absolute majority of adolescents in an organized matter.

Naturally, research on schools has a long tradition of focusing on the effects of schools on academic achievement. There are some worrying trends that show that Swedish adolescents’ performance in school has become worse over the last decade, and that boys to a higher extent than girls are low achievers in school (SOU, 2010:80; Swedish National Agency for Education, 2009). Researchers have also looked at associations between academic achievement and self-reported health. For example, a recent systematic review on longitudinal studies on academic achievement and mental health reveals that early (pre-adolescence) low achievement has a negative effect on health. In adolescence, this result was only found in girls. The same review also acknowledges the relationship between academic achievement and health to be reciprocal; that is, having poor health also affects academic achievement (Gustafsson, et al., 2010).

In the research community, relations with peers have been looked at from the perspective that peers have a positive as well as a negative influence on their adolescent friends (Harris & Cavanagh, 2008). Peer relations can be examined from several perspectives, such as the prevalence of friends, the quality of the relations as well as the friends themselves (Scholte & van Aken, 2008). What is important about relations to peers is that they are relatively loose and flexibly formed; nonetheless, peer relations in adolescence, compared with peer relations in childhood, are more stable and marked by higher commitment (Scholte & van Aken, 2008).
On one hand, research shows that strained relations with peers are strongly related to poor health (Brolin Låftman & Östberg, 2006; Gillander Gådin, 2002). Strained relations with peers may result in bullying behaviors, and adolescents who are bullied have less contact with friends and fewer friends. In addition, being bullied is related to symptoms of depression and somatic complaints (Meland, et al., 2010).

On the other hand, positive peer relations may be a buffer for the relationship between low academic achievement and poor health (Gustafsson, et al., 2010; SOU, 2010:79). Similarly, support from teachers is a protective factor just as conflict with teachers is a risk factor for poor mental health (Hjern, et al., 2008; SOU, 2010:79). Having skilled and helpful teachers is also associated with good self-reported health (Modin & Östberg, 2009). To summarize, similar to parent-adolescent relations, relations with teachers and friends are thought to have either a direct or indirect (buffering) effect on adolescent health.

There are also other school factors that have been shown to be associated with adolescent health. For example, schoolwork pressure is associated with psychosomatic pain and psychological complaints (Hjern, et al., 2008; Wiklund, et al., 2010). Similarly, perceptions of school demands is associated with poor self-reported health, especially for girls (Eriksson & Sellström, 2010).

Researchers have also looked at school factors of a more organizational and structural character as possible determinants of learning and health outcomes. These are characteristics of a shared school environment. Research on school-level variables has mostly been performed using the outcome of academic achievement; however, these results may also be relevant to health research due to the significant relationship between academic achievement and health. A systematic review of school factors shows that teachers’ ability to evaluate the effects of their own teaching as the most important for adolescent academic achievement (Hattie, 2008). On the other hand, student-teacher ratio and teachers’ formal education were not associated with adolescent academic achievement (Hattie, 2008), which is inconsistent with yet another study on school factors and academic achievement (Mayer & Ralph, 2008).

From a health perspective, there are also some school-level factors that are important to health, although not to the same extent as academic achievement (Opdenakker & Van Damme, 2000). Teacher discussions and collaborations have a positive effect on adolescents’ well-being (Opdenakker & Van Damme, 2000). Also, the school’s social climate, high expectations on students and strong educational leadership have been shown to have an effect on the well-being of adolescents (Sellström & Bremberg, 2006).

School characteristics such as school size, student-teacher ratio or proportion of students with high grade point average are themselves very
different in character, which means that they may influence health in diverse ways. For example, not having enough teachers in the classroom may affect student academic achievement, which in turn affects that person’s health. On the other hand, that person may be able to sustain his/her grades; however, his/her health may still be affected by less contact with adults in school. The proportion of students with high grade point average in high school is a very different type of school-level characteristic, and may therefore affect health differently than student-teacher ratio. Being a student in a school where many other students perform well academically may be stressful if the student is a low achiever.

**Gender**

Previous research on adolescent health repeatedly reports differences between boys and girls, to girls’ disadvantage (Hjern, 2006; Petersen, et al., 2010; SOU, 2010:79; Vinnerljung, Hjern, Weitoft, Franzen, & Estrada, 2007). Researchers from several research disciplines have struggled to ascertain why girls and boys (as well as adult women and men) differ in health. Among them, gender researchers apply a gender perspective on adolescent health. Below, some basic theoretical concepts from gender research are introduced, before describing two different types of explanations on health differences between boys and girls.

Gender and sex are two concepts that commonly are debated among researchers; they are defined differently in various research contexts. For example, sex is defined as two relatively immutable categories, male or female, while gender is defined as socially constructed roles and expectations of men and women, expectations that change depending on time and space (Phillips, 2005a, 2008). Femininity and masculinity are two other concepts used to describe cultural beliefs about how to be a man (boy) or a woman (girl). These concepts are related; masculinity cannot be defined without the concept of femininity and vice versa (Connell, 2005). Central within feminist theories is also the idea of a hierarchical gender system, in which women are subordinated to men (Gemzöe, 2010).

Furthermore, researchers have brought forward the idea that gender is not something that just is; rather, it is something that people do (West & Zimmerman, 1987). Doing gender means that masculinity and femininity are constructed all the time. Young people particularly tend to experiment with what is masculine and what is feminine. In comparison with adults, adolescents have a higher mobility in gender constructions, although they are still within the same existing gender structure as the rest of the society. This implies that adolescents’ ability to cross gender barriers without sanctions is limited (Connell, 2002). Sometimes adolescents accept the notion of gender as portrayed by the adult world and sometimes they reject it
(Wiklund, et al., 2010). They find their own way of relating to the prevailing
gender structure, in different places and at different times.

There are two different categories of explanatory models which have been
used to explain health disparities between genders (Hammarström, Härenstam, & Östlin, 2001). One category consists of biological/genetic
models, which are based on knowledge of the body and a search for the
causes of poor health within the individual. An example of a
biological/genetic explanatory model is a study that attempts to explain
differences between girls’ and boys’ self-reported health by studying the
onset of puberty (Aro & Taipale, 1987).

The second category of explanatory models is socio-cultural, in which
disparities in health are viewed from the perspective of the individual as well
as social and cultural circumstances surrounding the individual
(Hammarström, et al., 2001). More specifically, the social and cultural
environment is thought to affect the life circumstances and health behaviors
of the individual. For example, risk behaviors are considered masculine in
many societies (Courtenay, 2000; Kimmel, 2008; Phillips, 2005b). The
shorter life expectancy of men in all countries in the world is explained in
part by the risk behavior being a part of a masculine construction
(Courtenay, 2000; Phillips, 2008). Even in adolescence, a higher proportion
of boys become victims of violence and accidents (Public Health Report,
2009). Another study that used a socio-cultural perspective found that
increased demands and reduced controls within the high school
environment affect girls more negatively than boys. The researchers use this
finding as an explanation to why girls experience poorer health (Gillander
somatic complaints may then “be viewed as part of a condition characterized
by perceived pressure, high activity and physiological arousal and/or
exhaustion, rather than single pain symptoms” (p. 63). Another study shows
that girls, given the prevailing gender order, are more attentive to ill health
and are also more prone to report ill health than boys (van Wijk & Kolk,
1997).

The distinction between biological/genetic and socio-cultural models has
been criticized due to their interrelation (Fausto-Sterling, 2005). Some
researchers claim that research on gender differences in health would benefit
from embracing both of these models simultaneously (Hammarström, et al.,
2001; Hyde, Mezulis, & Abramson, 2008).
Research utilization of local surveys

Across Sweden, the health and living habits of adolescents are sometimes researched through local school surveys conducted within municipalities and regions. The purpose is often, if not always, to gather knowledge that is to be used by the professionals from different fields (e.g. social services, schools) who come in contact with adolescents. In the case of the local school survey used in this thesis, the survey aimed to gain knowledge that could be used to plan preventive activities as well as for health promoting activities (Sjömar, Andersson, & Domeij, 2007). In other words, data are collected because they are useful. For example, knowledge on adolescent health in a region may be useful for the professionals within health services, social services, or school administration. That does not mean that these professionals automatically use the collected data. In fact, research has shown that knowledge or research utilization is quite complex (Amara, Quimet, & Landry, 2004; Landry, Amara, & Lamari, 2001).

To my knowledge, there is no research on how results from local school surveys are utilized. There is, however, a relatively large body of information regarding research utilization, which has been developed, for example, in nursing and policy research. Most researchers in this field agree on viewing research utilization as a process containing several different steps or phases (Dobbins, Ciliska, Cockerill, Barnsley, & DiCenso, 2002; Landry, et al., 2001). Research utilization may be summarized as a process containing five stages, namely knowledge, persuasion, decision, implementation and confirmation (Dobbins, et al., 2002).

When attempting to define research utilization, researchers differentiate between different types of utilization, namely instrumental, conceptual and symbolic use (Amara, et al., 2004; Weiss, 1979). Instrumental use incorporates a rather simple idea: if knowledge exists, then it will be used, to solve a particular problem, for instance. Conceptual use, on the other hand, is not as direct. Instead, research is used perhaps together with other sources of knowledge, which together form the basis of a decision. Conceptual use has been shown to be the most common type of research utilization (Amara, et al., 2004; Weiss, 1980). Symbolic utilization, sometimes referred to as political utilization of knowledge, occurs when research is utilized as a way of justifying decisions or actions (Lavis, et al., 2002; Weiss, 1979).

Apart from trying to define research utilization, previous research has also focused on ascertain the barriers to and facilitators of research utilization. What researchers often conclude is that research utilization is complex, and that barriers and facilitators can be found on different levels, including individual and organizational levels. Researchers have yet to reach
a consensus on important factors influencing research utilization (Peterson, Rogers, Cunningham-Sabo, & Davis, 2007).

In nursing, a barrier scale has been developed, identifying barriers to research utilization in four dimensions. These are the characteristics of the recipient, the organization, the research itself, and the communication (Funk, Tornquist, & Champagne, 1995). Characteristics of the recipient have to do with the individual’s skills, awareness and willingness, while characteristics of the organization include issues of time (or lack thereof) and support from the workplace. Continuing on, the research has to be believable and relevant, as well as communicated in a clear and accessible way (Funk, et al., 1995). Other studies on barriers to research utilization have shown similar results without using the barrier scale (Nilsson Kajermo, Nordström, Krusebrant, & Björvell, 1998). Other researchers have divided important factors into other types of problem dimensions, namely expectations, transfer, acceptance and interpretation (de Goede, Putters, van der Grinten, & van Oers, 2010). Barriers included in expectations and transfer deal with the process of the utilization, such as timing, limited results and relevance. Barriers included in the dimensions acceptance and interpretation occurred on an individual level; perceived credibility of the research and responsibility to take action.

Previous research has also focused on facilitators of research utilization. Clear target groups has been identified as a facilitator to utilization (Lavis, et al., 2002). In addition, the person/organization who disseminates the results needs to be credible (Lavis, et al., 2002), a finding which is confirmed in another study identifying effective leadership and so called “program champions” as being facilitators of research utilization (Durlak & DuPre, 2008; Peterson, et al., 2007). As expressed by several studies, communication and interaction between those who disseminate and those who receive facilitates the utilization process (Durlak & DuPre, 2008; Lavis, et al., 2002). On an individual level, factors include attitudes towards research (Estabrooks, Floyd, Scott-Findlay, O’Leary, & Gushta, 2003), motivation and ability to read, and ability to understand and evaluate research (Peterson, et al., 2007).

In this thesis, I have chosen to look at both barriers to and facilitators of research utilization. Also, different kinds of utilization were explored, using theoretical concepts retrieved from previous research. This approach is not new; however, by studying research utilization from the perspective of a local school survey and the utilization of its results in school settings, this study attempted to extend existing knowledge within this field.
My take-off points

In 2004, I was employed by the social services research unit at the municipality of Umeå, which included a position as a project manager of a local school survey, the Leva-survey (Levnadsvaneundersökningen, translates into Survey of Living Habits). Being a project manager entailed all survey administration as well as having a coordinating role throughout the process of conducting the survey. During that year, the Leva-survey was somewhat remodeled, including changes in the questionnaire. This work was performed by various administrations within Umeå municipality (school, leisure, social services), the county council of Västerbotten as well as by researchers from Umeå University. In the fall of 2004, I was accepted into the Ph.D. program at Umeå University with the idea that I could use data from the Leva-survey in my postgraduate studies. For the first year (plus a few months), I worked half time at the social services research unit (as the project manager of this survey). During the other half of the time, I underwent my postgraduate studies. Over that course of time, data were collected from the Leva-survey on two occasions: in the fall of 2004 and 2005. I chose to do the quantitative study included in this thesis on the data collected in 2005. After 2005, I was no longer involved in the administration of the Leva-survey.

These practical circumstances are worth reflecting over. Despite my position as a project manager during the beginning of my postgraduate studies, I did not have the authority to, for example, alter the questionnaire to fit my research questions, which by that time were relatively vague and concentrated more on research utilization than on examining self-reported health.

In other words, the items in the 2004 and 2005 Leva questionnaire were not created for research purposes primarily. As a result, I have had to try to be creative when choosing what research questions were both possible and appropriate to ask the data at hand. At times, it has been challenging; however, the broad scope of the questionnaire also has provided many choices and possibilities. Early on, when viewing the data, the results on adolescent health seemed particularly interesting, particularly the clear gender differences in self-reported health. By viewing the available data, reading previous research on adolescent health, and following my own personal interests, I was able to focus the quantitative study’s shape.

In my qualitative study, I have had a somewhat different take-off point. When I was the project manager of the Leva-survey, I met with and was approached by school principals and teachers, who expressed frustration with surveys of this kind, often with regards to the way they were used (or
rather not used). I found that complaint interesting, seeing as how they struggled to have all students to participate in the survey without utilizing the results. My qualitative study emerged from that experience. I felt that it was important (and interesting), particularly due to the relative lack of previous research in this context, to explore the utilization of such a survey in a school setting.

**Methods**

**Overall research design**

This thesis consisted of two empirical data sets. The empirical basis for articles I-III consisted of data from a survey directed towards adolescents in grades 7-9 in the compulsory school system. The main empirical basis for article IV consisted of interviews with school district managers and principals, although survey data also were used for that article. The quantitative and qualitative study is described in detail below.

Since 2007, my work with this doctoral thesis has been situated within a research project, funded by the Swedish Council for Working Life and Social Research (grant number 2007-0595). The research project consisted of me and three other researchers, of which two were my doctoral supervisors. They are also the co-authors of the articles in this thesis. The research project did not entail any other doctoral students.

**The study context**

The data for this thesis were collected in the Umeå region, a region consisting of six collaborating municipalities (Umeå, Vännäs, Vindeln, Bjurholm, Nordmaling, and Robertsfors) located in the county of Västerbotten in the northern part of Sweden. The municipalities in this region are geographically close (see Figure 2) but they differ from each other in a number of aspects (see Table 1). In order to get some perspective on this region, data from 2005 has been retrieved on each municipality directly from Statistics Sweden’s database (more specifically from the Total Population Register and the Swedish Register of Education, [www.scb.se](http://www.scb.se)). Data on the proportion of children with foreign background and the proportion of children with an income standard below 1.0 were retrieved from a report published by Statistics Sweden (Statistics Sweden, 2006).
Within the Umeå region, the municipality of Umeå is the largest with a population of 111,000 (see Table 1). The other municipalities have a population of between 2,600-8,400 people. Umeå municipality has a rather young population; the average age is three years younger than the national average (which is 40.9 years). Four of the other municipalities in the Umeå region have populations who are up to five years older than the national average. Also, the proportion of the population who has at least three years of higher education is remarkably higher in Umeå compared with the rest of the Umeå region. Also noticeable is the relatively low proportion of children (age 0-17) with a foreign background in the whole Umeå region, if compared with the Sweden average. According to Statistics Sweden, a person is of foreign background if he/she is born outside of Sweden, or if he/she is born in Sweden but both parents are born in another country (Statistics Sweden, 2006). Income standard, on the other hand, is a measure of incomes within a family, when costs for living, family size and family structure are considered. Living costs are calculated through recommended levels used by the social services (when administrating income support applications) and a norm for the actual living arrangements (Salonen, 2010). Having an income standard of 1.0 means that a family has an income at the lowest reasonable economic standard, whereas being below an income standard of 1.0 represents less than the lowest reasonable economic standard (Statistics Sweden, 2006). Income standard is used, for instance, as a measurement of child poverty (Salonen, 2010). In the Umeå region, the proportion of children (age 0-17) who have an income standard below 1.0 is generally lower compared with Sweden as a whole.
In a recent report, differences between municipalities in the Umeå region are noted in relation to a child health index, consisting of indicators such as smoking, alcohol use, self-reported general health, bullying, and child poverty (Region Västerbotten, 2012). Umeå municipality is higher ranked on the total child health index, while other municipalities in the Umeå region are a lower ranked when compared to Sweden as a whole. The same pattern is shown in self-reported general health. There is a 10% difference between the municipality with the highest (Umeå, ~85%) and the lowest (Bjurholm, 74%) proportion of adolescents in grades 6 and 9 with good self-reported general health (Region Västerbotten, 2012).

### The quantitative study (Articles I, II and III)

The first three articles in this thesis were based on data from a survey named the Leva-survey, a survey that targeted students in grades 7-9 (age 12-15) within compulsory school. The survey was launched in 1996 and has been performed regularly since then (each year or every second year). From its inception, the Leva-survey has undergone a number of changes. For example, students in Umeå municipality have participated in the Leva-survey each time; however, sometimes other municipalities have been included. In 2004 and 2010, the survey underwent rather large transformations with regards to the content of the questionnaire as well as with regards to who was responsible for the survey administration. For example, prior to performing the survey in 2010, the name of the survey changed into Youth in Umeå. The changes in the questionnaire have made it difficult to follow and compare results over time. I have analyzed at data from 2005.

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th>Average age</th>
<th>Proportion of population, age 25-64, with at least 3 years of higher education</th>
<th>Proportion of children (0-17 years) with foreign background</th>
<th>Proportion of children (0-17 years) with an income standard below 1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>9 047 800</td>
<td>40.9</td>
<td>20.1</td>
<td>15</td>
<td>7.0</td>
</tr>
<tr>
<td>Umeå</td>
<td>110 700</td>
<td>37.5</td>
<td>33.4</td>
<td>9</td>
<td>3.9</td>
</tr>
<tr>
<td>Vännäs</td>
<td>8 400</td>
<td>41.2</td>
<td>17.6</td>
<td>3</td>
<td>4.0</td>
</tr>
<tr>
<td>Vindeln</td>
<td>5 800</td>
<td>45.0</td>
<td>11.4</td>
<td>4</td>
<td>5.7</td>
</tr>
<tr>
<td>Robertsfors</td>
<td>7 100</td>
<td>43.1</td>
<td>14.3</td>
<td>4</td>
<td>5.0</td>
</tr>
<tr>
<td>Nordmaling</td>
<td>7 500</td>
<td>43.4</td>
<td>11.1</td>
<td>2</td>
<td>4.6</td>
</tr>
<tr>
<td>Bjurholm</td>
<td>2 600</td>
<td>46.1</td>
<td>11.1</td>
<td>4</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Table 1. Descriptive municipal data from 2005, retrieved from Statistics Sweden.
In 2005, the Leva-survey was web-based, and it covered all six municipalities of the Umeå region. Within these municipalities, all students in grades 7-9 were invited to participate in the survey. In that year, 5944 students were registered in a total of 21 schools. The response rate was 85%; data were collected from 5060 students (see Table 2).

Table 2. Description of survey respondents. N = 5060

<table>
<thead>
<tr>
<th></th>
<th>Boys (%)</th>
<th>Girls (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 7 (age 12-13)</td>
<td>33.2%</td>
<td>32.2%</td>
</tr>
<tr>
<td>Grade 8 (age 13-14)</td>
<td>34.6%</td>
<td></td>
</tr>
<tr>
<td>Grade 9 (age 14-15)</td>
<td></td>
<td>33.2%</td>
</tr>
<tr>
<td>Living with both parents</td>
<td>Boys 68.0%</td>
<td>Girls 68.5%</td>
</tr>
<tr>
<td>Living with single/neither parent</td>
<td>Boys 24.9%</td>
<td>Girls 23.0%</td>
</tr>
<tr>
<td>Foreign background</td>
<td>Boys 3.1%</td>
<td>Girls 2.5%</td>
</tr>
</tbody>
</table>

The survey was financed by several administrative offices (social services, school and leisure) within Umeå municipality as well as the County Council of Västerbotten. The actual administration and collection of the data was performed by a research unit situated within social services in Umeå municipality. As mentioned in an earlier section, at the time of the data collection (2005), I had dual employment; I was a Ph.D. student at Umeå University (50%) as well as the project manager of the Leva-survey (50%).

The questionnaire

Even if the Leva questionnaire was not aimed primarily at research purposes, it was constructed by a group of researchers from different disciplines, such as social work and epidemiology. Also, representatives from the school health care and municipal administrations (school, social services and leisure administration) participated in creating the questionnaire. To a large extent, the questionnaire items were taken from other national or regional questionnaires (such as BRÅ, CAN, Child-LNU, Liv och Hälsa Uppsala). The final questionnaire included 124 items covering the following areas (see Table 3 for examples of variables or Appendix 1 for the whole questionnaire): social background (9 items); friends and family (16 items); health (10 items); life in school (16 items); tobacco, alcohol and drugs (22 items); violence/crime (14 items); leisure and future (37 items).
Table 3. Examples of variables included in the analyses of the data (my translation). For more details, see Appendix 1.

<table>
<thead>
<tr>
<th>Health</th>
<th>“How do you feel?”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“During the last 12 months, how often have you experienced the following? Headache”</td>
</tr>
<tr>
<td>Norm-related behavior</td>
<td>“Have you ever been involved in offending or bullying a classmate in the last 12 months?”</td>
</tr>
<tr>
<td></td>
<td>“Have you ever used narcotics?”</td>
</tr>
<tr>
<td>Relations to parents</td>
<td>“Do your parents demand that you, beforehand, tell them what you are going to do if you want to go out, for example on a Friday night?”</td>
</tr>
<tr>
<td></td>
<td>“How do you agree with the following? I can talk to my parents about almost everything”</td>
</tr>
<tr>
<td>School</td>
<td>“Have you ever felt offended or bullied by school mates over the last 12 months?”</td>
</tr>
<tr>
<td></td>
<td>“How well do the following statements agree with your experience of school? There are clear rules for how we should behave in school”</td>
</tr>
</tbody>
</table>

Prior to launching the questionnaire, it was piloted in one school class within the relevant grades, followed by a discussion on the questionnaire items. Also, the questionnaire was sent to Statistics Sweden (Laboratory for Measurement Techniques) for a review of each question as well as a review of the general layout.

The absolute majority of the survey variables I used in the present research were on an ordinal scale level; the rest were on a nominal scale level (with one exception: grade). All questions had predefined answer alternatives. Some questions were single-item questions and others were set up as matrix questions. Article III used school-level data, containing information regarding student-teacher ratio, for example. Some school-level data were collected from the SIRIS database, which is provided by the Swedish National Agency for Education (www.skolverket.se). The school-level variables were on a ratio scale level.

Collecting the data

The administrators of the survey had one contact person per school, often times the principal. This person mediated all the information given to the school’s personnel, the students and their parents. The respondents were informed of the upcoming survey, through a letter distributed by teachers within each school a few weeks before it was taking place. The letter contained information on how and why the survey was being distributed.
The respondents’ anonymity was stressed in the text. They were also encouraged to show the information to their parents. The letter said that each student had a chance to win a movie ticket. These tickets were given to one class selected within the school with the highest response rate. Moreover, the school personnel who were to supervise the respondents while they completed the questionnaire were given instructions about the survey, its aims and their role beforehand, on two occasions.

Each school created their own schedule for when each class was to fill out the questionnaire, restricted by the boundaries of the survey period (3 weeks). There were differences between schools regarding how many computers were available. Most schools had a majority of their computers in specific computer rooms, and each class was taken to those rooms to complete the questionnaire. Other schools had the computers in classrooms or other areas within the schools.

The respondents completed the questionnaire during school hours at their respective schools. When the respondents were to fill out the questionnaire, they logged on through a specific website on the Internet with an individual password. These passwords were sent to each school by the survey organization and given to the respondents by the school personnel who were monitoring them. Personnel from the school were always present during the completion, to ensure that the respondents did not talk to each other. They also were instructed to help those who wanted to ask questions. Also, the respondents who finished filling out the survey were not to leave the room to go to break, because other students might try to hurry up in order to go to break early.

The completion of the questionnaire was set up in a manner so that the respondents first saw information about the survey including information about anonymity and participation being voluntary. After that, each page contained a number of questions divided into different areas like life in school, health, and leisure. The respondents could not click to go to the next page until all questions on the present page were answered. Also, if they were asked to only give one answer to a question, the questionnaire was set up so that it was not possible to click on more than one answer. On average, the respondents completed the questionnaire within 15 minutes.

The survey took three weeks to complete, from the first day the web site was opened until it was closed by the survey organization. This duration was due to certain classes being away for weekly field studies during the first week of the survey period. Also, sometimes classes were divided in groups so that they could complete the questionnaire at different times, mostly due to an insufficient number of computers.
Statistical analyses

Early on, the database was subjected to a screening and preliminary examination. The screening consisted of a check for missing values, analyses of frequency distributions and correlation analyses (Tabachnick & Fidell, 2001). These measures were taken to check for any irregularities as well as for getting familiar with the data. Due to the construction of the web-based survey, there was a very small amount of missing data among the completed surveys. The missing data were distributed randomly between different schools and grades. No statistical procedure was performed prior to data analysis to rectify missing data due to the small amount and the random distribution.

During the course of this research project, multiple factor analyses were performed. The main reason for the factor analyses was to explore underlying factors within the data (Bartholomew, Steele, Moustaki, & Galbraith, 2008; Tabachnick & Fidell, 2001). Also, it was another way of getting familiar with the data. First, a factor analysis was performed for all ordinal variables (apart from grade) in the questionnaire. Then, separate factor analyses were performed for different groups of variables (for example health, relations to parents). The factor analyses were performed separately for boys and girls as well as for the whole population. The results from the factor analyses were not directly used in any of the articles; however, the results guided me into other choices, such as how to combine variables.

Apart from the preliminary screening and examination, the statistical analyses varied between articles. Specific analyses are described below.

Article I

In preparation of the statistical analysis of article I, all ordinal variables were put through a dichotomization process, mainly as a result of a skewed distribution. Through logical reasoning, the variables were divided into doing physical exercise/not doing physical exercise, and not drinking alcohol/drinking alcohol, for instance. The general self-reported health question was dichotomized in accordance both with logical reasoning and common practice. The response alternatives, which were less than good, were labeled poor general health and those alternatives labeled good and very good formed the category of good general health. A few variables concerning self-reported health and some variables concerning norm compliance were summarized into combined variables, and thereafter dichotomized again. The second dichotomization was conducted because the distribution in many cases still was skewed, and because it hopefully would make the results easier to grasp and understand. Three variables were used to measure self-reported health: general self-reported health, somatic
complaints (combination of headache and stomach ache) and feelings of stress (combination of difficulties falling asleep, feelings of stress because of school and feelings of stress in leisure time). Apart from the health measurements, variables indicating norm compliant behavior were used.

In order to examine how different aspects of adolescent health and norm compliance relate, chi-square tests of cross tabulations were performed (Lind, Marchal, & Mason, 2001). A strict significance level was set at p < 0.01. Effect sizes were also examined due to the relatively large sample size (Breaugh, 2003).

In order to view health patterns for the extremely norm-compliant respondents, the dichotomized norm variables also were counted. All respondents who had not broken any norm (labeled as the "extremely norm compliant") formed one group and those who had broken one or more norms formed another group. All statistical analyses were conducted within SPSS, version 15.0.

**Article II**

In this article, the health variables were used once more, as well as variables concerning the respondents’ perceptions of their relations to their parents. All variables were dichotomized, using the same reasoning as in article I. The results from a correlation and factor analysis influenced my decision to summarize the independent variables into four combined variables, namely “Relationship quality”, “Communication”, “Demands – school, conduct towards others” and “Demands – monitoring, money”. In other words, these combinations were driven from analyses of the data rather than from a particular theoretical perspective. The combined variables were then dichotomized using a median split. The dependent variables used were general self-reported health, headache, stomach ache, difficulties falling asleep, feelings of stress because of school and feelings of stress in leisure time.

In order to examine differences between distributions, chi-square tests were performed. Associations between the variables were examined with bivariate and multivariate logistic regressions (Kleinbaum & Klein, 2002; Tabachnick & Fidell, 2001). Each independent variable was tested for possible interaction with gender and age. The significance level was set at p < 0.05. All analyses were conducted using SPSS, version 17.0 and PASW, version 18.

**Article III**

In article III, the general health variable was used as a dependent variable, mainly due to the other health variables showing insignificant results with
regards to the specific analyses performed in this article. All variables used in article III were dichotomized. The dependent variable and the independent variables were dichotomized using the same reasoning as in article I. In this article, I also used school-level variables as independent variables. Some were retrieved from the survey data and aggregated into a school level, while others were retrieved from Statistics Sweden. All variables on a school level were dichotomized using a median split.

A multilevel logistic regression was used in order to examine the variance in self-reported health on an individual and school level simultaneously (Bartholomew, et al., 2008; Duncan, Jones, & Moon, 1998). The multilevel modeling process consisted of three different models, each examining the variance in self-reported health on both levels as well as examining the associations between different individual- and school-level variables and self-reported general health. The statistical analyses in article III were made using PASW, version 18 and Stata/IC, version 11.1.

The qualitative study (Article IV)

The last article in this thesis aimed at learning more about the utilization process of a local school survey. More specifically, I chose to study the utilization process that emanated from the recurrent survey upon which I had conducted my quantitative study. This qualitative study differed in its set-up compared with the other articles, and it required other kinds of data. In order to meet this aim, I decided to interview key-persons within the utilization process with an exploratory approach. In 2011, twenty-one telephone interviews were carried out. The respondents were school district managers and principals from grades 7 to 9 schools. All respondents were employed within the same municipality (Umeå).

Collecting the data

The school district managers and principals were the main recipients of the survey results and can therefore be considered key persons in the utilization process. In Umeå municipality, there are thirteen school districts containing at least one school containing grades 7-9. I covered all of these school districts. Thus, thirteen school district managers were interviewed. Several school district managers were employed in dual positions, being school district managers as well as principals at the grade 7 to 9 school within their school district. In the school districts where this was not the case, I interviewed the school district manager as well as the principal. Eight respondents were employed solely as principals. By doing so, I managed to get information about utilization of survey data from all grade 7-9 schools in the municipality (21 interviews in total).
The respondents were contacted by phone, where they were informed of the study’s purpose and then asked if they wanted to participate by answering some questions over the phone. All respondents agreed to participate. Most interviews took place within the same phone call but some respondents rescheduled the telephone interview for another time.

The interviews with the school district managers and the principals were conducted following a semi-structured interview guide (see Appendix 2). The interview questions dealt with the dissemination of the results, for example how they had received the results and how they had passed on the results to school personnel, parents and students. Also, there were questions dealing with the utilization of the results. In other words, there was a set of questions asked to all respondents; however, sometimes the order or the wording of certain questions was altered depending on what the respondent had just talked about. The respondents were asked to consider the dissemination and utilization of the survey results from the latest survey that had been performed 4-6 months earlier, in the autumn of 2010. The survey had been remodeled and renamed in 2010; however, it still was directed towards the same age group, keeping a focus on different aspects of adolescents’ living habits.

Analysis

During the interviews, notes were taken, which were transcribed and extended immediately afterwards. Through this process, I was able to get as much of the answers down on paper as possible. Following the completion of all interviews, the process of analyzing the results began. The analysis was performed using conventional qualitative content analysis (Hsieh & Shannon, 2005). Qualitative content analyses can be performed in different ways, depending on the kind of data (Elo & Kyngäs, 2008) as well as on the purpose of the study/analysis (Hsieh & Shannon, 2005). The conventional content analysis suited this study since there is relatively little prior research done in this field. I chose to do the qualitative content analyses within the framework of qualitative description (Sandelowski, 2000), which “...is a straight descriptive summary of the informational contents of data organized in a way that best fits the data” (p.338-339). According to Elo and Kyngäs (2008), this sort of analysis aims to gain “a condensed and broad description of the phenomenon” (p. 108). In the analysis, I aimed at capturing mainly manifest contents (Graneheim & Lundman, 2004). When looking at the interviews, I tried to find patterns within the material. A multi-disciplinary group of researchers, the co-authors of the article IV, took part in the interview analyses.
Summary of results

In this section, results from articles I-III are presented together with the intention of simplifying the reading. These articles have their origin in the same survey data base, and they overlap at times. For information on which results originate from which article, see articles I-III or Thesis in a Glance. Results from article IV will have a specific presentation at the end of this section, because it differs from the other articles both regarding design and aim.

Most of the results presented in this section can be found in the articles; however, some survey results that have not been mentioned in the articles are also presented here.

Descriptive survey results

More than half of the adolescents reported having very good general health, and over a third reported having good general health. Although many reported good general health, the results showed that a rather large proportion of adolescents also reported health complaints. For example, 30% reported headache and 57% experienced feelings of stress because of school once a week or more often. A larger proportion of adolescents reported poor health in grades 8 and 9, compared with grade 7.

A majority of adolescents reported norm compliant behavior. For example, 85% had not bullied others and 69% had not played truant within the last 12 months. About half (52%) reported, though, that they had drunk alcohol one or several times. When comparing different grades, it became clear that norm compliant behaviors decreased with age. For example, 1% reported having used narcotics in 7th grade. The corresponding number for 9th grade was 7%.

Relations with parents were also examined. In general, adolescents appreciated their relationships with parents. For example, about 90% reported receiving appraisal from their parents and having an influence on family decisions. Regarding communication, there was a larger proportion of adolescents who were able to talk to their mother (67%) compared to their father (49%) about troublesome issues. The corresponding number for being able to talk to a friend was 60%. The vast majority of adolescents also experienced high demands from their parents, particularly regarding school achievement (89%) and truancy (94%). In grade 9, compared with grade 7, a larger proportion of adolescents reported poor relations with their parents.

Finally, four out of five adolescents reported being satisfied with school. A majority experienced clear rules in school, teacher praise, and ability to learn important things in school. On the downside, only 45% experienced a calm
working environment in school. In general, school satisfaction decreased when grade 7 was compared to grade 9. About one out of five adolescents reported having been bullied by schoolmates within the last year.

To summarize, the adolescents reported good health, being compliant to norms, having good relations with parents and being satisfied with school. On the other hand, the results showed a relatively high prevalence of health complaints and stress. Also, adolescents in grade 9, compared with grade 7, reported poorer health, less norm compliant behavior, poorer relationships with parents and poorer school satisfaction, indicating that early adolescence is a turbulent time.

**Associations with self-reported health**

As mentioned earlier, self-reported health was examined from different angles in articles I-III. Associations were the focus of these articles: the results are presented below.

The results showed that being norm compliant was associated with good self-reported health. These results were consistent throughout all norm compliant behaviors in the present study (eating breakfast, exercising, not playing truant, not bullying others, not using tobacco, alcohol or narcotics, not committing a crime), both for general health and somatic complaints. For example, of the adolescents who had not played truant, 24% experienced regular somatic complaints. Of those who had played truant, 42% experienced regular somatic complaints.

All of the adolescents who reported being norm compliant to all behaviors under study were counted and categorized as extremely norm compliant. Results showed that those who were extremely norm compliant also reported good general health, fewer somatic complaints and less stress to a higher extent than the other group (that reported non-compliance with one or more behaviors).

Furthermore, associations between self-reported health and parent-adolescent relations were examined. The results showed that experiencing poor relations or poor communication with parents increased the odds ratio of reporting poor health. The same pattern was shown for those who reported low parental demands regarding school and conduct.

Within the school environment, several variables were found to be significantly associated with health. For example, not being satisfied with school was associated with poor self-reported health, somatic complaints and stress because of school. Also, not experiencing clear behavioral rules, not experiencing that students’ opinions were taken seriously, and not receiving teachers’ praise were all negatively associated to self-reported health and stress. With regards to peer relationships, being subjected to
bullying by schoolmates was significantly related to poor self-reported general health.

To summarize, results showed that norm-related behavior, relations to parents, and the school situation are all associated with self-reported health, indicating the need for analyses that capture multiple arenas in adolescents' lives.

**Gender – differences and similarities**

Although an absolute majority of adolescents reported good general health, gender differences were obvious (see Table 4). Also, results showed that gender differences in self-reported general health increased with age. In grade 7, 7% of boys and 12% of girls reported poor general health. In grade 9, 13% of boys and 23% of girls reported poor general health. The increasing gender differences with age were significant in all health variables under study.

**Table 4.** Differences in self-reported health between boys and girls (age 12-15). Percentages. All differences are significant on a 0.01 level.

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor general health</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Headache once a week or more often</td>
<td>24</td>
<td>36</td>
</tr>
<tr>
<td>Stomach ache once a week or more often</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>Difficulties falling asleep once a week or more often</td>
<td>28</td>
<td>37</td>
</tr>
<tr>
<td>Stressed about school once a week or more often</td>
<td>51</td>
<td>65</td>
</tr>
<tr>
<td>Stressed in leisure once a week or more often</td>
<td>49</td>
<td>35</td>
</tr>
</tbody>
</table>

Overall, a larger proportion of girls (compared to boys) reported norm compliant behavior. For example, 81% of boys and 90% of girls reported that they had not bullied others. The proportions of adolescents who had not played truant and who did not smoke were similar for both boys and girls. The results on norm compliant behavior and gender were further nuanced when divided by grade. For example, there were fewer girls who reported having used narcotics in grades 8 and 9; however, in grade 7, this proportion was equal for boys and girls. Furthermore, there was a significantly larger proportion of girls in the 7th grade who had not drunk alcohol compared with boys. In grades 8 and 9, these differences were no longer significant. For
bullying others, using tobacco and committing a crime, the gender pattern was stable through the different grades, with girls reporting more norm compliant behavior.

In absolute terms, the associations between norm compliance and self-reported health were stronger for girls, since the absolute increase of self-reported health percentage-points between those who were norm compliant and those who were not were larger for girls than for boys. Boys, though, tended to show a larger relative increase, which could be explained by boys having lower “starting points” in self-reported health. Analyses on health patterns for the extremely norm compliant showed that they were the same for both boys and girls, although girls continually reported more health problems than boys.

Boys and girls reported similar experiences concerning the quality of the relationship with their parents, with a few exceptions. There were larger proportions of girls who reported not being able to talk to parents about almost everything, not trusting parents and not being able to do fun things with parents. A similar proportion of boys and girls reported that they were able to talk to their mother (~67%). In contrast, 58% of the boys and only 39% of the girls reported that they were able to talk to their father. Regarding demands from parents, a larger proportion of boys experienced low demands from parents, with the exception of demands on how money is used. The associations between parent-adolescent relations and self-reported health were similar for boys and girls; however, they were a bit more pronounced for girls seeing as how girls were constantly at a higher level of poor self-reported health.

Continuing on to the last set of variables, those concerning adolescents’ experience of school, results showed great similarities between boys and girls. For example, regardless of gender, four out of ten students experienced that students’ opinions were not taken seriously. For the most part, the school-level variables used in article III were associated to self-reported general health in a similar manner for boys and girls. For example, student-teacher ratio and school size were not related to general health, regardless of gender. However, differences between boys and girls were found in a few variables. On an individual level, for boys, living in a single/neither parent household and being of foreign background was significantly associated with poor self-reported general health. On a school level, for boys, attending a school with a high proportion of students who do not experience clear behavioral rules in school increased the odds ratio of poor general health. For girls, none of the school-level variables were associated with poor general health.

To summarize, adding gender as a variable when analyzing self-reported health in adolescence is crucial. Some differences were striking, such as how girls repeatedly report poorer health and how the gap between boys and girls
was much wider in grade 9 compared with grade 7. Important to highlight also were similarities between genders. In the present research, similarities were mostly found in results regarding parental and school factors.

**Examination of hierarchical structure**

Results from the present research showed that there were small but significant differences in self-reported health between schools. Most variation in self-reported general health appeared on the individual level. In other words, differences in self-reported health were much greater within schools (between individuals) than between schools.

When variables on an individual and school level were added, differences between schools lessened and practically vanished, as in the case of the boys. This finding indicates that the individual- and school-level variables accounted for some of the variation in self-reported health, more so for boys. Most school-level variables, such as school size and student-teacher ratio, were not significantly related to self-reported health.

To summarize, these results showed that there are much greater differences between individuals than between schools. Also, most of the measures of school quality used were not associated with poor self-reported health, indicating that other aspects of the school might be of greater importance.

**Dissemination and utilization of a local school survey**

The fourth and last article in this thesis aimed at examining how results from a local school survey were disseminated and utilized. Results from interviews with school district managers and principals showed that dissemination and utilization can be viewed as two phases in one process. The respondents described facilitators and barriers regarding both dissemination and utilization (see Table 5). There were qualitative differences between facilitators and barriers; in other words, they were not just opposites. In addition, the facilitators and barriers differed whether the managers/principals spoke about the dissemination or the utilization phase, although they also had some common ground.

In the dissemination phase, school district managers first received the survey results, containing results from all questions in the questionnaire (presented on a school district level). The school district managers were then responsible for further dissemination of survey results to both school personnel and parents. They were also responsible for gathering a school district collaboration team, within which other organizations, such as youth centers and social services, were to take part and discuss the results. These responsibilities made school district managers’ actions or non-actions very
important; they can be described as gatekeepers within the organization. Although the survey did not have a detailed plan for utilization of results, the school district collaboration could be seen as setting up a structure to enable such utilization.

The interviews showed that what happened in the dissemination phase was important for utilization. For example, having the results presented for the whole school district instead of for each school separately caused trouble for some of the respondents, both with regards to interpretation and utilization.

**Table 5.** Findings from interviews. Barriers and facilitators for dissemination and utilization.

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Facilitators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Dissemination</td>
<td></td>
</tr>
<tr>
<td>Unclear how the students were reached in latter part of dissemination process.</td>
<td>Results presented in a familiar way.</td>
</tr>
<tr>
<td>Details of data not local enough.</td>
<td>Involved parents and students.</td>
</tr>
<tr>
<td>Teachers’ weariness and workload.</td>
<td>Teachers motivated by receiving the results on a classroom level.</td>
</tr>
<tr>
<td>Hard to reach parents in general.</td>
<td></td>
</tr>
<tr>
<td>Phase 2: Utilization</td>
<td></td>
</tr>
<tr>
<td>Network – consisted of already-existing networks.</td>
<td>Network – consisted of already-existing networks, could also generate new collaborative networking.</td>
</tr>
<tr>
<td>Unequal legitimacy in network partners.</td>
<td>Comparisons made data more usable.</td>
</tr>
<tr>
<td>Responsibility not anchored with intended users.</td>
<td>Good as a tool in quality assurance.</td>
</tr>
<tr>
<td>Unclear purpose of collaboration.</td>
<td>Facilitated dialogue.</td>
</tr>
<tr>
<td>Ambiguity in how to interpret findings.</td>
<td>Few outputs, however all with inclusive, participatory ideas.</td>
</tr>
<tr>
<td>Local survey not local enough.</td>
<td></td>
</tr>
<tr>
<td>Few concrete outputs.</td>
<td></td>
</tr>
</tbody>
</table>

The respondents described certain barriers for dissemination of the survey results (see Table 5). An example of a barrier in the dissemination phase is that details of data were not local enough; in other words, they were not presented in a usable manner (results were presented for the whole school district instead of for each school separately). Within the dissemination phase, facilitators described by the respondents were results being presented in a manner that was familiar to them. Having previous experience of such a presentation simplified the reading and interpretation of the survey results.

Moving on to the utilization phase, certain barriers were mentioned, particularly in terms of school district collaborations. For example, there was unequal legitimacy in the collaboration partners, causing a loss of direct
decision power within collaborations. School district collaborations were also mentioned when facilitators of utilization were discussed. For example, the structure of the school district collaborations also enabled new collaborative partnerships to be generated and facilitated dialogue between different actors or organizations.

To summarize, several barriers as well as facilitators were recognized, which illuminated areas that can be developed and strengthened further. Also, the results showed that school district managers have an important gatekeeping function in the dissemination and utilization phase.

**Discussion**

The discussion is divided into two parts, differentiating between discussion on results and methodological reflections. The discussion on results aims to put the main findings into a larger perspective and to view them in relation to previous research. The methodological reflections cover discussions on reliability, validity, trustworthiness and ethical considerations.

**On the results**

This thesis sought to gain knowledge on self-reported health in adolescence by examining how self-reported health is associated with behavioral, parental and school factors. Moreover, this thesis aimed at studying the dissemination and utilization process of local school survey results within a school context.

*Adolescents seem to be doing fine, right?*

The survey results can be viewed from different perspectives. On one hand, adolescents seem to be doing just fine. The vast majority report good general health. Most of them do not experience health complaints, such as headaches and stomach aches. Moreover, they think highly of their relations to their parents, and they are fairly satisfied with school. Most are also norm compliant. On the other hand, when results are viewed from a different perspective, there seems to be quite a few reasons why adolescent health is a concern. Results showed an increase of poor health between grades 7 and 9, particularly for girls. Moreover, a larger proportion of girls reported poor health, somatic complaints and stress compared with boys. These results are consistent with other research (Petersen, et al., 2010; Public Health Report, 2009; Sweeting & West, 2003; Östberg, et al., 2006). The increase of poor health and health complaints over the past decades, particularly for older girls, is yet another indication of why it is important to pay attention to
health in adolescence (Hagquist, 2009b). Interestingly, adolescent health researchers (myself included) tend to focus on health problems and factors that influence poor health, rather than focusing on good health and factors that might facilitate good health (Petersen et al., 2010; Stagner & Zweig, 2008). Could it be, that focusing so much on health problems has caused unnecessary concerns about adolescent self-reported health, when in fact, we do not need to be so worried?

Adolescence is a turbulent time in life, when adolescents experience biological, psychological and social changes that are bound to affect them one way or another (Michaud & Fombonne, 2005; Rew, 2005). As a consequence, it is perhaps not strange that people tend to regard poor health in adolescence as “natural”, a part of life. Some researchers have also discussed this issue. For example, Michaud and Fombonne (2005) argue that it is necessary to view health problems from the perspectives of duration, severity, and impact in order to separate what can be perceived as “normal” from what can be perceived as problematic.

Steinberg (2011) argues that “problems during adolescence are not caused by adolescence” (p. 403). With this statement, Steinberg means that health problems cannot be viewed as naturally given; rather, they are to be taken seriously (Steinberg, 2011). Research shows that those who report somatic complaints in adolescence also are more likely to report somatic complaints in adulthood, indicating that health problems do not necessarily vanish with age (Brattberg, 2004). In addition, somatic complaints are associated with anxiety and depression, suggesting that such health complaints may entail further health problems (Fichtel & Larsson, 2002).

A possible argument for those who question the severity of reports on poor adolescent health is that the increase of poor health may be explained by adolescents today being more willing to report on their problems, or more conscious of their feelings. However, in a Swedish Official Government Report (SOU, 2006:77), the reliability of adolescents’ self-reports is discussed, concluding that the increase of poor mental health in Swedish adolescents is of substantial meaning and that self-reports of this kind are to be considered reliable.

Although most research focuses on poor adolescent health, research findings that are somewhat more positive are also important in order to understand the nuances of deteriorating health in adolescence. For example, research shows that the prevalence of adolescents’ self-reported health complaints is no longer increasing; in other words, the negative development seems to have come to a halt (Hagquist, 2011; Swedish National Institute of Public Health, 2011b). For boys and girls in grade 9, there is even evidence of a decrease of mental health complaints between 2005-2009 (Hagquist, 2011). Moreover, another study shows that the prevalence of health complaints has not increased over a 20-year period for adolescents aged 11
and 13 (only for 15-year-olds), thereby highlighting discrepant developmental trends between younger and older adolescents (Hagquist, 2009a).

In my opinion, it seems justifiable to be concerned about adolescent health. Further research is needed to understand poor health in adolescence, its determinants as well as differences in health between boys and girls (Petersen, et al., 2010). In addition, the increase of poor health over time, for girls, is a source of concern. I believe it is important to also highlight results that display a more positive picture of adolescent health. Researchers who focus on health problems are more likely to portray adolescent health from that perspective due to the measurements they choose to include in their research. Perhaps it comes down to the definition of health. If health is something more than, for example, not experiencing somatic complaints, then researchers need to consider those component(s) of health to a larger extent than is being done today. I believe future research would benefit from including indicators of good health. Also, more qualitative research is needed to gain a deeper understanding of adolescent health, where adolescents themselves are able to describe and explain their views on poor and good health (Johansson, Brunnberg, & Eriksson, 2007; Landstedt, et al., 2009). Perhaps they would be more suited to judge if adolescents are doing just fine or if adolescent health is a concern to be reckoned with.

**Determinants of self-reported health in adolescence**

The survey results showed that self-reported health was associated with how adolescents behave, how they perceive their close relations as well as with their situation at their workplace, the school. These results witness of the complexity of adolescent self-reported health as well as of the necessity to view adolescent health from different perspectives.

**Norm-related behavior**

According to the survey results, norm compliant behavior was associated with good health. Norm compliance is a rather uncommon concept in research; these types of behaviors are more often labeled norm-breaking behavior. Following the stance I have taken in this research, that norm compliance and norm-breaking behavior can be thought of as two sides of a coin, my results can be compared with studies on norm-breaking behavior as well. My findings regarding associations between norm compliance and health are in that case consistent with other research, which have focused on associations between norm-breaking behavior and health (Boyce, et al., 2008; Hoel, et al., 2004). Furthermore, one study shows that being occasionally or frequently engaged in multiple risk behaviors increases the
odds ratio of poor self-reported health by 1.5 and 3.4 times, respectively (Boyce, et al., 2008). The results from the present research also showed that those who engaged in multiple norm-breaking behaviors reported worse health than those who only engaged in one or none of the norm-breaking behaviors.

I have chosen to label the behaviors under study (for example not smoking, not playing truant, not using alcohol, not committing a crime) as expressions of norm compliance (as opposed to norm-breaking behavior), a labeling familiar in other research as well (Petersen, et al., 2010; Sundell, Klint, & Colbiörnsen, 2007). Other researchers choose to label these behaviors as health behaviors, arguing that the behaviors themselves are endangering health (Carter, McGee, Taylor, & Williams, 2007; Villard, Rydén, & Ståhle, 2007). I labeled them as norm-related behaviors because I believe adolescents engage in these behaviors partly due to social expectations. In other words, social expectations, in comparison to a belief that a behavior is healthy (or not), play a stronger role in an adolescent’s decision to smoke or not, for example. The health effects of smoking are not visible in adolescent years; they show up later in life. On the other hand, alcohol use is an example of a behavior that may cause immediate health effects, like headaches. Future research could benefit from elaborating on the independent effect of norm compliance from the inherent health effects of using alcohol or narcotics, for instance.

Other researchers have labeled some of the behaviors under study (committing a crime, bullying others, playing truant, using alcohol etc.) in yet a different way; as externalized behaviors, which stand in contrast with internalized behaviors (Buist, et al., 2004; Gustafsson, et al., 2010; Scaramella, et al., 1999; SOU, 2010:79). Research shows that boys to a higher extent report externalizing behavior and that girls to a higher extent report internalizing behavior (Rescorla, et al., 2007), an assertion that has been challenged by other researchers (Broberg, et al., 2001; Cederblad, 2004; Kapi, Veitsista, Sovio, Järvelin, & Bakoula, 2007). Finally, a third way of labeling the behaviors in this study is to refer to them as risk factors of poor health (Boyce, et al., 2008; Cederblad, 2004; Ekstrand, 2006), which is contrasted with protective factors for good health (Ekstrand, 2006).

Depending on how these behaviors are labeled, they can be thought of as health outcomes or as predictors of health. On one hand, when such behaviors (for example committing a crime or using narcotics) are labeled as externalizing behaviors, they often are thought of as health outcomes, side by side with internalized behaviors. On the other hand, referring to the same behaviors as risk factors or as norm-related behaviors opens up the possibility of them being predictors of a health outcome. I believe different perspectives on the studied phenomenon are always important to pursue in research. A division of externalized and internalized behaviors is interesting
because it broadens the perspective of possible health outcomes and gender differences. A risk with such a perspective is cementation of stereotype conceptions that girls and boys have different health outcomes. For example, both boys and girls may display both externalized and internalized behaviors, to different degrees (Cederblad, 2004).

Labeling norm-related behaviors as predictors enabled me to view them from the perspective of societal norms as well as to see them in relation to other, rather straightforward but perhaps narrow, health variables. This perspective then entails the risk of failing to include relevant health outcomes that perhaps capture how boys (typically) express or define poor health.

Relations to parents

The present research showed that perceiving relations with parents as good was associated with good self-reported health. More specifically, poor relationship quality, poor communication and low demands regarding school/conduct were associated with poor health. Previous research also bears witness to the importance of parents with regards to adolescent health. Factors such as good mood in the family (Jerdén, et al., 2011), relationships and communications with mother and father (Pedersen, et al., 2004; Rask, et al., 2003), parent-adolescent bonds (van Wel, et al., 2000) and parental caring (Ackard, et al., 2006), are all associated with self-reported health.

In the present research, the aspects of parent-adolescent relations may be related to the theoretical concepts used in previous research. Relationship quality and communication can be related to responsiveness (Baumrind, 1991), or the relational side of parenting (Kerr & Stattin, 2003). Furthermore, the aspects that dealt with parental demands can be related to theoretical concepts, such as demandingness (Baumrind, 1991), or the regulatory-supervisory side of parenting (Kerr & Stattin, 2003). From the perspective of parenting styles, previous research shows that the authoritative parenting style is associated with good self-reported health (Newman, et al., 2008). An authoritative parent is warm, accepting, nurturing but able to form age-appropriate demands. This can be compared with my results, in which relationship quality, communication and high demands regarding school/conduct were associated with self-reported health. This finding can be contrasted, though, with research showing that high demands from parents and teachers are associated with poor self-reported health (SOU, 2010:80; Stoeber & Rambow, 2007).

Interestingly, according to the present results, perceiving low demands regarding monitoring, money was not associated with poor health. This result is contradictory to the results of a study by Newman et al. (2008), which shows that the neglectful parenting style (including low levels of
control) was associated with poor health. The impact of parental monitoring has been questioned by Kerr and Stattin, who claim that the adolescent's willingness to disclose information about their lives and whereabouts is more important than parents' efforts to monitor the same thing (Kerr & Stattin, 2000, 2003). In other words, if monitoring had been more extensively studied using complementary variables, the results might have been different.

**Life in school**

School is often upheld as an important environment for adolescents. The results of the present research showed that several school-related factors were associated with poor self-reported health, such as poor school satisfaction and poor relations with teachers. School satisfaction has been found to be of importance in self-reported health in other research as well (Karademas, Peppa, Fotiou, & Kokkevi, 2008). Moreover, research shows that school factors such as being poorly treated by teachers (Hjern, et al., 2008) are associated with poor adolescent health. In the present research, those adolescents who experienced being commended by teachers when they had done something good also reported good health to a higher extent than those who were not commended, which is consistent with other research (Modin & Östberg, 2009).

In adolescence, relations to peers become more important and influential (Harris & Cavanagh, 2008). Having poor relations with peers can include being subjected to bullying, which is recognized by previous research as being negatively related to adolescent health (Carter, et al., 2007; Gustafsson, et al., 2010). In the present research, the results showed that being bullied by schoolmates increased the odds ratio of poor general self-reported health, even after controlling other background and school factors. Other research also highlights that having good relations with peers is associated with adolescent well-being (Brolin Låftman & Östberg, 2006; Lindberg & Swanberg, 2006).

To summarize the discussion on determinants of self-reported health, the results showed that being compliant to societal norms matter to self-reported health. Relations to parents matter. Relations to peers matter. How things are at school matter. Most likely, these processes are reciprocal, as indicated by research on parent-adolescent relations and health (Boutelle, et al., 2009), as well as norm-breaking behavior and health (Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998).

The complexity of self-reported health and its associations with different determinants is important to keep in mind. An interesting direction for future research would be to consider the relative influence of different determinants. Also, it does not end with establishing a relationship between
two variables. Longitudinal research is needed to explore the mechanisms behind how and why, for example, relations to parents matter in health. In addition, adolescents are affected by determinants in different ways. Adding coping (Steiner, Erickson, Hernandez, & Pavelski, 2002) and resilience perspectives (Ungar, 2008) would be both interesting and relevant in relation to determinants of self-reported health.

Focus on individuals or schools?

In article III, I looked at structural differences in self-reported health between schools as well as individual and school-level predictors of poor self-reported health.

In a report from the Swedish National Agency for Education, two rather recent changes within schools are discussed in terms of Swedish students’ lower academic achievement scores (Swedish National Agency for Education, 2009). First, the student body within schools is becoming more homogeneous due to increased segregation. According to this report, segregation is a development visible both regarding where people live and which schools they choose for their children. The second change this report mentioned concerned the decentralization process of schools, which has resulted in schools being governed by municipalities rather than the central government. The decentralized government of schools has resulted in increased differences between municipalities, for example regarding money spent on schools as well as regarding student-teacher ratios within schools (Swedish National Agency for Education, 2009). The processes of segregation and decentralization also have been noted by researchers (Lindblad, Lundahl, Lindgren, & Zackari, 2002; Lundahl, 2002). In conclusion, these studies indicate that schools could differ in several respects, which then might be reflected in differences between schools in how adolescents perceive their health.

The results of the present research showed that the variation in self-reported general health only to a very small extent was explained by differences between schools. Instead, the variation was explained by differences between individuals. This result is consistent with other research (Konu, Lintonen, & Autio, 2002; Saab & Klinger, 2010) and indicates that self-reported health preferably should be looked upon from the perspective of the individual instead of the school. Put differently, differences between schools are not visible in how students rate their health. This finding is interesting given the previous discussion indicating that the processes of segregation and decentralization may cause possible differences between schools. Perhaps this result results from self-reported health being the outcome measure, as these processes are seen as central in terms of academic achievement in Swedish schools (Swedish National Agency for
Also, schools in the Umeå region may differ that much. For example, the process of segregation is not nearly as noticeable in middle- and small-sized municipalities as it is in the larger cities in Sweden (Swedish National Agency for Education, 2003).

The majority of school-level variables, such as grade point average, school size, and student-teacher ratio were not associated with self-reported health. These results indicate that such structural characteristics of schools are of subordinate importance when it comes to self-reported health in adolescence. Even though most school-level factors were not significantly associated with health, it does not necessarily mean that schools do not matter to adolescent health. For example, when comparing different outcomes, previous research shows that schools accounted for a much larger proportion of the variance in academic achievement outcomes compared with health outcomes (Opdenakker & Van Damme, 2000). Also, using different kinds of school-level variables might have altered the results of the present research. For example, other school-level variables that have been found to be of importance are high student expectations as well as strong leadership within schools (Sellström & Bremberg, 2006).

**Adolescent self-reported health, norms and gender**

Throughout articles I-III, analyses on gender were included, either by performing separate analyses between boys and girls or by adding gender as an independent variable.

As described earlier, the results showed striking differences between boys and girls in self-reported health; in short, girls report poor health to a higher extent than boys. Trying to explain gender differences in health, researchers have used biological/genetic as well as socio-cultural perspectives, sometimes separately and sometimes together (Hammarström, et al., 2001).

The symptom perception theory is an example in which both perspectives are used explained gender differences in self-reported health (van Wijk & Kolk, 1997). First, advocates of the symptom perception theory argue that girls are more aware of their body and bodily symptoms, partly due to them reaching puberty at an earlier age, but also because girls, more than boys, are socialized into bodily awareness. Second, as discussed by van Wijk and Kolk (1997), compared with girls, boys are less prone to report and disclose their symptoms, due to what the authors describe as the “boys don’t cry doctrine” (p. 242). A qualitative study on adolescents, aged 10-15, show that boys and girls are hesitant of reporting physical but foremost psychological symptoms; however, such reporting is even more difficult for boys (MacLean, Sweeting, & Hunt, 2010). The adolescents show great awareness of perceived expectations of them as girls and boys, and describe that the expectations of girls are somewhat more flexible regarding reporting of symptoms.
What is potentially problematic with the symptom perception theory is that it refers to health differences between boys and girls as perhaps not being real; instead, they are products of different ways of reporting symptoms (Annandale, 2009). However, bringing awareness to differences in symptoms reporting does not necessarily argue for girls’ and boys' similar experiences of health. Potential gender differences in reporting health problems are important to acknowledge, since it could mean that boys, for example, underreport health problems.

Some socio-cultural perspectives on gender differences in self-reported health are related to factors within schools. For example, for girls, being sexually harassed at school is associated with poor psychological health for girls (Gillander Gådin & Hammarström, 2005). Research also shows that poor health is more strongly associated with negative school satisfaction for girls than for boys (Ravens-Sieberer, Kōkönyei, & Thomas, 2004).

Researchers suggest that adolescence is a time in life where boys and girls, more intensely than before, are trying to figure out their own gender identity (Hill & Lynch, 1983). Gender intensification as a theoretical perspective is supported by empirical research as well (Aubé, Fichman, Saltaris, & Koestner, 2000; Wichstrom, 1999). This idea has been examined in association to self-reported depression in order to explain why gender differences in depression emerge in this period in life. One study shows that assuming too much responsibility and having trouble being assertive, traits that the authors label as typically feminine, are associated with depression (Aubé, et al., 2000). Similarly, another study shows that reporting depressed moods is associated with high scores of typically feminine traits but not with typically masculine traits (Wichstrom, 1999). To my knowledge, there is no similar research on gender intensification theory and self-reported general health, somatic complaints, or stress. This subject would be interesting for further studies.

**Gender and norms**

The present study showed that a larger proportion of girls reported norm compliant behavior, a finding nuanced by age and type of behavior. This finding is consistent with other research (Landstedt, et al., 2009; Wiklund, et al., 2010). Several of the norm-related behaviors in the present study, such as use of narcotics or criminal behavior, are generally regarded as being constructs of masculinities (Courtenay, 2000). From that perspective, boys engage in norm-breaking behaviors partly in conforming to norms of masculinities, which may affect their health (Courtenay, 2000). This conclusion does not have to be constrained to only boys; indeed, girls can also perform masculinities (Annandale & Hunt, 1990). Following the
previous argument, girls are then perhaps more likely to be norm compliant due to it being part of constructs of femininities.

I anticipated that being extremely norm compliant would be associated with poor self-reported health, seeing as high demands of norm compliance could lead to feelings of pressure and stress (Landstedt, et al., 2009). The results did not support my expectations; rather, the results showed that those who were extremely norm compliant also reported better health than the others. Moreover, the results showed that low demands from parents regarding school and conduct were associated with poor self-reported health. This finding is interesting because other research shows that norms and demands can be troublesome. For example, one study shows that girls experience stress due to high demands and pressure regarding performance at school or in the home, and perfection (Wiklund, et al., 2010). Another study shows that, compared with boys, girls have higher expectations, expectations that are gendered, to take responsibility and to perform (regarding school, in leisure time, and regarding appearance), which put them at risk of poor health (Landstedt, et al., 2009). The same study also shows that boys as well as girls experience high demands regarding their own performance, although girls’ expectations on their own performance are higher (Landstedt, et al., 2009).

Since the survey data used in this thesis were collected prior to the research questions being formed, a gender perspective has been added after data were collected. I was therefore limited to the variables at hand and to the categories of boy and girl. I believe it is important not only to focus on and try to explain differences between boys and girls. It is also important to note similarities between boys and girls, since they are not only more commonly found but also often neglected in research (Connell, 2002; Phillips, 2008). I am aware of that my findings and the way they are presented may exaggerate differences between boys and girls rather than explain and possibly reduce differences (Hammarström, 2007). Often, separating boys and girls is done partly due to an essential societal belief that boys and girls are different; in other words, differences are natural and must be considered deterministic (Hamreby, 2003). In this research, several similarities between genders were noted. For example, gender did not interact with the association between relations to parents and self-reported health. Also, there were noticeable similarities between genders in their perceptions of relationships and communication with parents as well as in their perception of school factors. Future research aiming to study health from a gender perspective needs to incorporate such a perspective throughout the entire research process (Hammarström, 2007). Variables used need to extend beyond the boy/girl dichotomization. For example, adding measures of acceptance of gender stereotypes could be useful in relation to health outcomes (Phillips, 2008).
Research shows that gender interacts with other dividing categories, such as ethnicity and class (Hankivsky & Christoffersen, 2008; Wamala, Ahquist, & Månsdotter, 2009). Several researchers stress the existence of multiple masculinities (Connell, 2005; Courtenay, 2000) as well as multiple femininities (Gemzöe, 2010). Put differently, there is not just one set of expectations on boys or girls; there are several. Also, researchers show that different masculinities hierarchically are related to each other (Connell & Messerschmidt, 2005). Expanding the knowledge of multiple masculinities as well as multiple femininities would be both an interesting and an important subject for further research. Such research could, for example, add dimensions of ethnicity and class into analyses on gender differences in health.

**Using survey results**

The Leva-survey can be seen as a rather typical local school survey. Both municipal administrations and the county council in this region were responsible for the survey, and the actual performance of the survey was handled within a municipal research unit. One of the main objectives of the Leva-survey was to gather useful knowledge for practitioners within schools, social services etc. (Sjömar, et al., 2007). The aim of article IV was to study how the results of this survey were utilized within a school setting.

The results showed that dissemination and utilization were two separate but interrelated phases in one process. This result is consistent with previous research, where researchers argued that research utilization should be looked upon as a process, including several phases (de Goede, et al., 2010; Dobbins, et al., 2002; Landry, et al., 2001). Dobbins et al. (2002) have identified the following phases in the utilization of research: knowledge, persuasion, decision, implementation and confirmation. In relation to the present research, the knowledge phase is similar to phase I, labeled the dissemination phase. The other phases (persuasion, decision, implementation and confirmation), as described by Dobbins et al. (2002), are similar to what I have referred to as the utilization phase. These phases include activities from potential users discussing the results (trying to see if and how the results can be useful in their organization) as well as decisions being made to implement and evaluate the resultant knowledge.

In the present research, there was a detailed and well-structured plan for the dissemination phase but not for the utilization phase. The managers/principals found it somewhat difficult to describe how they used the survey results, particularly when they were asked to specify concrete activities planned or actions taken after seeing the survey results. This ambiguity could result partially from the lack of attention or structure on the utilization phase. Previous research has identified being attentive to all
phases in the process of research utilization is identified as important (de Goede, et al., 2010).

There are different types of research utilization. Previous research differentiates between instrumental, conceptual and symbolic use (Amara, et al., 2004; Weiss, 1979). Most of the utilization, as described by the managers/principals, can be categorized into conceptual use. Conceptual use has been identified as the most common type of utilization (Amara, et al., 2004; Weiss, 1980). I believe that conceptual use is the most common type of utilization partly because of its inclusive nature. In addition, it is difficult to say exactly when and in what decision a particular piece of knowledge is utilized. Instead, in consistency with the definition of conceptual use, a person integrates knowledge gathered from different research (or other sources of knowledge) and these sources form the basis for a particular decision or action. Weiss (1980) also believes that since it may be difficult for the users to describe details of their own research utilization, research is actually utilized to a further extent than what is known. To summarize, depending on how research utilization is defined, the results from the present research showed more or less utilization of the survey results by the managers/principals. Also, there are no sharp-edged boundaries between instrumental, conceptual and symbolic utilization; at times they may overlap, which makes it difficult to get a clear picture of the utilization process.

**Barriers and facilitators**

In both the dissemination and utilization phase, several barriers and facilitators were identified by the managers/principals. What I found interesting was that the barriers and facilitators qualitatively differed from, instead of only mirroring each other. Also, they differed depending on being in the dissemination or utilization phase.

Funk et al. (1995) divide barriers to research utilization into four dimensions: the individual characteristics of the potential user, the organization surrounding the potential users, the research itself and how the research is communicated. Other researchers categorize barriers of research utilization differently, through the dimensions of expectation, transfer, acceptance and interpretation (de Goede, et al., 2010). Both types of categorizations relate to the barriers as well as the facilitators found in the present research. For example, characteristics of the potential user include users’ awareness of the research, seeing its value as well as the user’s ability to evaluate the research (Funk, et al., 1995). In the present research, managers/principals mentioned that mentors/teachers receiving the results on a classroom level was a facilitator, thereby making sure that teachers were reached and aware of the survey results. Also, results being on a classroom
level motivated the teachers, as the results were seen as more useful. De Goede et al. (2010) also identified not finding personal relevance to the research as a barrier of utilization. The managers/principals in the present research described details of data not being local enough as a barrier both for dissemination and utilization. This barrier lessened the relevance of the research and therefore the potential of the research being used.

As described by Funk et al. (1995), the second dimension of potential barriers to research utilization has to do with characteristics in the receiving organization, including users’ lack of time to both read and implement new ideas as well as lack of organizational support to use research. In the present research, teachers’ workload was described as a barrier to research. Several facilitators described by the managers/principals are also directly or indirectly related to the time issue. For example, having the results presented in a familiar way simplified the reading and interpretation of the research, which also saved time.

The third dimension by Funk et al. (1995) includes characteristics of the research itself, dealing with for example the perceived quality and believability of the research. In the present research, the interpretation was hindered by discussion of the robustness of the results, which also is consistent with the dimension of acceptance as described by de Goede et al. (2010).

The final and fourth dimension deals with communication, including that the research is communicated in a clear and accessible way (Funk, et al., 1995). This dimension was visible in the present research as well. As facilitators, having the results presented in a familiar way and being able to compare results with the municipal average facilitated both the dissemination and utilization of survey results. Another mentioned barrier for dissemination was not receiving the results on a detailed enough manner. In the transfer dimension, de Goede et al. (2010) also recognized the importance of these factors.

In the present research, school district managers (managers) were identified as key persons in the dissemination and utilization phase process. They were responsible for further dissemination within their organization as well as for establishing a functioning school district network in which survey results were to be discussed and hopefully utilized. Having credible leaderships or so called “program champions” also has been found to be important in other research (Durlak & DuPre, 2008; Lavis, et al., 2002).

Methodological reflections: the quantitative study

Methodological reflections are important so that the quality of the research can be assessed thoroughly. Making my methods transparent and providing critical reflections upon those methods enforces quality control, a necessity
in research. In this section, a number of methodological issues concerning
the quantitative study are discussed.

**Concerns of causality and generalization**

In this thesis, the quantitative study was cross-sectional. In other words, it
captured the opinions and thoughts of the adolescents at one particular time.
In cross-sectional studies, it is not possible to study relationships between
different time periods. In order to statistically prove causes-effect
relationships, longitudinal studies are needed, in which repeated measures
over time are performed (Bruce, Pope, & Stanistreet, 2008). Even though a
cross-sectional study does not permit empirically based causal analyses,
causal statements still can be made from a theoretical point of view. For
example, the possibility to discuss causal relationships is enhanced when
findings are consistent with other (longitudinal) research results.

The respondents included were not a representative sample of
adolescents in Sweden. The question is, was I right to generalize my results
to being applicable to Swedish adolescents, as I have done in my articles?
Comparing different geographical areas is not a simple task. It is difficult to
know what indicators to choose describing and comparing geographical
areas/regions. As displayed in Table 1, the Umeå region differed somewhat
from the rest of Sweden. Also, the municipality of Umeå was different from
the other municipalities in the Umeå region, having a population that is
relatively young and well educated. It also has a higher proportion of the
population with foreign background. Important to point out is that three out
of four respondents lived within Umeå municipality.

In my opinion, the Umeå region is not that different from the average of
Sweden. Therefore, it is reasonable to think that the results of this survey are
passably similar to survey results one would retrieve from other regions in
this country. One argument for generalization is that the findings correspond
with results available from other national as well as international research. If
the adolescents in the Umeå region would have been very different from the
rest of Sweden, it probably would have appeared in the survey results.

**Validity**

Validity and reliability are important concepts in assessing the quality of
research. These concepts are interrelated; in order to achieve high validity in
research, high reliability is necessary. High reliability, however, does not
grant high validity (Dahmström, 2011; Robson, 2002). Validity can be
defined as the degree to which a question really measures what it intends to
measure (Litwin, 1995; Robson, 2002).
Content, face, criterion and construct validity

Another rather common way to define validity is to differentiate between content, face, criterion and construct validity (Bruce, et al., 2008; Litwin, 1995). Content validity measures the appropriateness of each variable in a questionnaire in relation to what it intends to measure. It is to be assessed by those with knowledge of the area of interest (Bruce, et al., 2008). In the present research, content validity was assessed both by relevant researchers as well as representatives from different municipal administrations who cooperated in creating the questionnaire.

Face validity is a slightly different assessment of the questionnaire, including inquiries into whether the questions are clear, as assessed by potential respondents or by other non-experts of survey constructions (Litwin, 1995). In the present research, face validity was assessed by the adolescents who participated in the pilot study as well as by the Laboratory for Measurement techniques at Statistics Sweden, both of which gave their opinion on particular difficulties or ambiguities in the questionnaire.

Criterion validity is defined as how well the measures used in the present research agree with other measures, which in turn have been validated (Bruce, et al., 2008). Many of the questions were replicas of questions from other questionnaires (national and regional); they are commonly used in that sense.

Finally, construct validity encompasses a larger scope and can be defined as “theoretical measure of how meaningful a survey instrument is” (Litwin, 1995, p 45), meaning that a variable should be associated with similar variables but unassociated to dissimilar variables (Bruce, et al., 2008). Direct actions to ensure construct validity have not been undertaken in this thesis.

Non-response bias

Another factor which may influence the validity of the results is non-response bias (de Winter, et al., 2005). Non-response is a threat to the validity of the research, since the non-responders may have answered differently than those who completed the questionnaire. In the present survey, the response rate was relatively high (85%), which in itself strengthens the validity of the survey results. In total, 5060 respondents completed the questionnaire, which is a substantial number from a statistical point of view. The high response rate was most likely due to the survey taking place in school and to the survey being conducted over the course of 2-3 weeks. Adolescents who had been away were able to participate in the survey upon their return. Research on non-response bias shows inconsistent results. There is research showing that non-responders are no different than
initial responders with regards to their health (de Winter, et al., 2005; Michaud, Delbos-Piot, & Narring, 1998); however, other research indicates that they are worse in terms of norm-breaking behavior (Eaton, Brener, & Kann, 2008; Michaud, et al., 1998).

**Validity of the general health question**

A survey question regarding self-reported general health is commonly phrased “All in all, how would you rate your health?”, or “How would you rate your health at present?”. In the present study, the question on self-reported general health was phrased “How do you feel?” (Hur mår du? in Swedish). This question is somewhat difficult to translate into English, since “Hur mår du?” and “How do you feel”? intuitively do not mean exactly the same thing; rather, they are not used exactly for the same purpose. It was deliberately phrased this way due to the age of the respondents. The youngest respondents (12 years old) may not fully understand the question if they were asked to rate their health. I have not found any research on the validity of a general health question phrased exactly as in the present study. Research comparing three different phrasings of self-reported general health, however, concluded that there were no large differences with regards to the answers between the questions, thereby opening up different ways of asking about general health (Eriksson, Undén, & Elofsson, 2001).

Research on a general health question has shown that this question may mean different things to different people. One study shows that for 14-24 year olds, most respondents referred to health behaviors (38%) and health problems (36%) when answering the global health question (Krause & Jay, 1994). Another study has shown that adolescents refer more to their mental health than their physical health when asked to report on their general health (Zullig, Valois, & Drane, 2005).

Rather than being just a spontaneous rating of health, for adolescents, the general health question has been shown to be moderately stable over time (Bailis, Segall, & Chipperfield, 2003; Boardman, 2006). Also, research has shown that self-reported general health is a valuable predictor of mortality, among the elderly (Idler & Benyamini, 1997; Mossey & Shapiro, 1982) as well as among younger people (Burström & Fredlund, 2001; Larsson, Hemmingsson, Allebeck, & Lundberg, 2002).

In sum, all research runs the risk of producing invalid results. A threat to the validity of the present research is that most questionnaire items have not been validated in a strict statistical sense. Several other measures were taken when the questionnaire was created to ensure high validity. In retrospect, the high response rate of 85% also strengthens the validity of the results.


*Reliability*

Reliability can be defined as the degree of dependability in the research (Robson, 2002). It answers the question of a phenomenon’s measurement and replicability (Djurfeldt, Larsson, & Stjärnhagen, 2010). There were several factors that may have influenced the reliability of the present research. The environment in which the respondents completed the questionnaire differed between schools, mostly due to differences in the placement and number of computers available. Completing the questionnaire in a computer lab together with all (or half) of your class mates is different than completing the questionnaire two or three class mates at a times in a secluded corner of a class room, although it is difficult to speculate how this may have affected the results. As a consequence of these circumstances, not all students in for example a school were able to complete the questionnaire at the same time, which in turn may have caused them to talk amongst each other about the content of the questionnaire. In order to enhance reliability, the school personnel (who were to monitor the respondents) were informed about certain “rules” that were to be enforced during the completion of the questionnaires. For example, respondents were not to speak to each other nor were they to leave the room to go to break after they had completed the questionnaire.

As described earlier, the questionnaire was created by researchers and reviewed by experts at Statistics Sweden; it was also tested on a group of adolescents. The questionnaire was quite exhaustive (124 items, took 15 minutes on average to complete). The web-based format only showed small portions of the questionnaire on each “page”. This format might have helped since the respondents did not see all questions at once, or perhaps it had the opposite effect since it kept the respondents from knowing when the questionnaire would be over.

The fact that the questionnaire was displayed on a computer screen might have made it easier for respondents to see each other’s answers, which might have affected how the questions were answered. Research has shown that there are only insignificant differences in prevalence rates and associations when comparing web-based and pen-and-paper surveys (Cronk & West, 2002; McCabe, Couper, Cranford, & Boyd, 2006). For example, there were no differences in alcohol, tobacco and drug use when results from web-based and pen-and-paper surveys were compared (Eaton, et al., 2010; Halfors, Khatapoush, Kadushin, Watson, & Saxe, 2000). Nonetheless, there is research showing contradictory results (Brener, Billy, & Grady, 2003; Wang, et al., 2005).
**Ethical considerations**

Early on in the research project, an application was sent to The Regional Ethical Review Board in Umeå, Sweden. The study was approved: dnr 08-001 Ö.

In the database, there was no way to identify the persons who had completed the questionnaire. The single-use passwords that were used to log in to the web-based questionnaire were not connected to a certain key that made individual tracing possible. Theoretically, I have had the possibility to combine variables concerning school, grade and other background data and thereby identify smaller groups of individuals. That ability was never aligned with the purpose of the study or within my interest as a researcher. The purpose has always been to use the data on a general group level, for example, to compare those with good health to those with poor health. The database has only been accessible to researchers participating in this study and it has been stored in locked rooms on computers protected by individual passwords.

Ethical considerations were also made during data collection by the survey organization. First, letters were distributed, via school personnel, to the respondents, in which they were informed of the purpose of the upcoming survey. The respondents were encouraged to show the information to their parents. Since the respondents received this information, individual consent was presumed as the respondents completed the questionnaire. In the letter, as well as at the beginning of the actual questionnaire, the anonymity of the respondents was stressed. At the end of the questionnaire, there was contact information for the project manager of the survey organization; respondents were encouraged to contact this manager if they had any questions. No information was given to the respondents about this data being used in a research project.

Even though the respondents were informed of the questionnaire being voluntary, it is interesting to reflect upon a respondent’s ability to refuse to participate. A rejection would perhaps have to be displayed in public (in front of classmates). It would also imply saying no to a person from school; an adult that they may view as an authority figure (Masson, 2004). Adolescents in school are so used to questionnaires that the voluntary aspect might be forgotten, since it may seem like another part of ordinary schoolwork. Perhaps the respondents did not even reflect upon the possibility to not participate; rather, they completed the questionnaire just because they were told to do so.

Another ethical aspect concerning this survey is that parental consent was missing, even for the respondents who were under 15 years of age. This is perhaps not an uncommon practice for local or regional school surveys; thereby, it may be considered an unspoken ethical right. In this survey, the
children received information that they were encouraged to show to their parents. Therefore, some (but most likely not all) parents had been informed, but none had given their active (oral or written) consent. The necessity of parental consent is definitely an ethical issue worth discussing since this is known to happen in local school surveys, probably due to the heavy administrative work of collecting, in this case, over 5000 parental consents.

For the respondents, the individual benefits from this research are small. They have possibly benefited from the survey if the local or regional authorities have utilized knowledge gained from the survey in the schools or in other activities directed towards the adolescents; however, that possibility is not directly related to the research in this thesis. Benefits of this research will hopefully be more apparent for future adolescents since the research results may contribute to the knowledge of self-reported health in adolescence.

**Methodological reflections: the qualitative study**

The main aim of this section is to reflect upon and be critical toward the choices made throughout the qualitative study. In qualitative research, it is not as common to use concepts such as validity and reliability. Instead, I discuss the trustworthiness (and ethical considerations) of the research.

**Trustworthiness**

Conducting trustworthy qualitative research is essential for quality research. Trustworthiness can be reached in all stages in the research process, and it can be evaluated through making the research process as visible and transparent as possible. Trustworthiness can be divided into three constructs: credibility, dependability and transferability. Credibility deals with selection of context, respondents and data collection method (Graneheim & Lundman, 2004; Lincoln & Guba, 1985). Being interested in how local school survey results were utilized, I chose a local school survey that I had previously studied, thereby being somewhat familiar with the survey. My choice of respondents was a consequence of them having a central position in the school context, being main recipients for schools and having a coordinative role for each school district in the utilization of the survey results. Also, since I wished to gather deeper knowledge and understanding of the phenomenon of research utilization, it seemed appropriate to choose interviews as a data collection method.

Another important aspect of credibility is how the collected data are managed (Ely, Anzul, Friedman, Gardner, & McCormack Steinmetz, 1993). For example, credibility necessitates that that the results I present are
correct (to the extent that this is possible) and faithful to what the respondents told me. As a researcher, I ultimately decide what will be presented and the shape of the data’s presentation (Stake, 2003). In this study, I believe that I have managed to stay close to the data in my presentations. I have for example used quotations to illustrate my points, thus giving the readers the possibility to read some of the original data. During each interview, I took careful notes of what the respondent said. Each answer was written down alongside other comments (made by the interviewees) which were not directly associated with a particular question. Immediately after the interview, I continued and expanded on these notes by filling in what I had not had time to write while they were speaking. Thereby, I took notes on most of the things that they had spoken of, regardless of whether or not I initially felt they were of any interest to the study’s aim. The trustworthiness of this process was also enhanced during the analyses since the data were discussed and analyzed with other researchers (the co-authors).

Another important way to gain trustworthiness is by taking dependability into account (Lincoln & Guba, 1985). The data collection was conducted over a series of two months, since the respondents at times were very hard to reach. Being interviewed at a later time could mean that the respondent would have trouble remembering the process; however, in this case, it could also mean that some of the respondents had time to utilize the survey results to a higher extent than others.

It has never been my intention to generalize the finding of this qualitative study in a statistical sense; however, the results show a complexity in the phenomenon of utilization of results from a local survey and may therefore be of interest to practitioners as well as researchers who wish to further examine this field. The transferability of the results is enhanced because the research process was visible and the presentation of the results as rich as possible (Graneheim & Lundman, 2004; Lincoln & Guba, 1985).

**Ethical considerations**

As described earlier, the respondents were contacted by phone. I introduced myself and described my research briefly. I said that I wished to interview them and described the purpose of the interview. I then asked for their permission to perform the interview. All respondents agreed, after which the interviews were conducted. Thereby, I had informed the respondents and they gave me their consent to participate in the study, both important ethical elements in research (Fontana & Frey, 2003; Swedish Research Council, 2011).

After each interview, I stored the data in electronic documents that, just as in the quantitative study, were kept in a computer protected by an
individual password. This computer was also kept within a locked room. When data from this qualitative study have been presented, all details that may identify the respondents have been removed. Quotations from individual respondents have been presented using a job title and a number (for example school district manager 9). I interviewed 21 people from two different job categories. By presenting job title and a number in the quotations, it is not possible for anyone else to identify the respondents. All in all, these measures have been taken in order to ensure the privacy and confidentiality of the respondents (Fontana & Frey, 2003; Swedish Research Council, 2011).

Conclusions and implications

The Swedish government defines living conditions during childhood and adolescence as one of the main target areas for public health work in Sweden (Prop, 2007/08:110). Actions taken to improve adolescent health include funding directed towards researchers as well as practitioners. For example, from 2012-2015, the government in Sweden will invest 650 million Swedish Crones (about 69 million Euros) into student health services (press release from the Ministry of Education, Nov 1st 2011). Childhood and adolescence are highlighted as important because modern societies affirm the fundamental idea that interventions in the early years of a person’s life can prevent future health and social problems (Lagerberg & Sundelin, 2000). Successful prevention at an early stage can be meaningful both from the perspective of the individual as well as from the perspective of national economics.

The present research has contributed to extended knowledge about self-reported health in adolescents within the Umeå region. For example, the apparent complexity of adolescent health indicates that actions taken to improve adolescent health need to focus not only the individual but also on parental and school factors. In addition, considering social influences, particularly social norms is effective in health promotion programs consistent with results from a research review (Peters, Kok, Ten Dam, Buijs, & Paulussen, 2009). Other research has also promoted the inclusion of multiple (in comparison with single) components as important to ensuring effectiveness of school health promotion programs (Peters, et al., 2009).

Prevention of poor health and health promotion within schools benefit from taking a whole-school approach, in which all professionals within schools take responsibility for the health of their students (Weare & Nind, 2011). These results are interesting if contrasted with the Education Act (SFS, 2010:800) and Swedish national curriculum (Swedish National Agency for Education, 2011), which stress that the responsibilities of health-promoting
activities lay within the student health services as well as within health education as a school subject (www.skolverket.se). However, a whole-school approach is also noticeable in these steering documents. For example, one inclusive goal states that schools have an overall responsibility to promote student well-being and development.

More research is needed on the effectiveness of preventive or health promoting programs or activities. A research review of such programs shows that there is little evidence on the effectiveness of most programs currently used in Sweden (Swedish Council on Health Technology Assessment, 2010). Researchers explain the lack of evidence as partly being due to the lack of high-quality evaluations, particularly in terms of evaluations performed within the Swedish context. The review concludes that most programs used in Sweden have not been evaluated, which means that one cannot be sure that they really prevent poor mental health in adolescence.

The present research also explored what happened after local school survey data were collected, thereby highlighting the important process of utilization of survey results in a school setting. After all, a basic assumption when local surveys are being conducted is that the results will be used. The results from the present research showed potential barriers to and facilitators of such a process. It also indicated potentially useful knowledge for initiators, organizers, and administrators of local school surveys. The results showed that the utilization process needs to be planned and prepared for beforehand. To fully include dissemination and utilization into the process of conducting a survey, extra funding from decision-makers may be required.

Local school surveys have strong potential in local preventive work since they generate the knowledge needed for the design of interventions that are adapted to specific problems for that region. In that sense, local school surveys open up the possibility of tailoring interventions specific to different geographical areas. The present research showed that having local data available was essential to the users of the survey results, even though results did not differ that much between schools. Others have also brought forward the idea that generating local data serves as motivation for engagement on a local level (Ström & Åberg, 1999). In other words, local decision-makers would benefit from being sensitive to heterogeneity even within limited geographical areas when designing preventive policies. The motivational effect of receiving results on a very local level, such as on a school or class level, should also be considered.

Studies on adolescent health and determinants of health traditionally fall under the domain of public health. Nonetheless, there are several reasons why adolescent health is also important from a social work perspective. Health inequalities from a societal point of view are important to social work because the determinants of health are in fact social (Bywaters, McLeod, &
Napier, 2009). For example, children and adolescents live in families with different economic realities which may negatively affect their health (Halldórsson, et al., 2000). As shown by the present research, poor relations to parents are associated with poor health in adolescence. The WHO Commission on Social Determinants of Health also states that health inequalities are a matter of social justice (CSDH, 2008). In other words, people are affected by the context in which they live, both economically and politically (Rose, 2000).

When social determinants of health are taken into consideration, the view on health is broadened. Health promotion and prevention of poor health would then incorporate more societal sectors than just the health sector. Social workers often come across poor health as experienced by their clients. If clients are not already living with poor health, they are most likely living in conditions that may threaten their health. In a Swedish school setting, the school social worker often holds a school counselor position. As such, school counselors have a rather clear goal to work with health issues. According to the national curriculum (Swedish National Agency for Education, 2011), personnel within the student health services are primarily to focus on health promotion and prevention of poor health. Also, social work professionals in health care settings are naturally more aware of their clients’ health. However, other social work professionals may benefit from a raised awareness regarding client health issues.

In summary, poor self-reported health in adolescence is a concern for multiple sectors in society, including that of social work. Professionals as well as researchers need to consider the complexity of adolescent health and its determinants.
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Appendix 1. Leva questionnaire

(This is not the original layout of the questionnaire. Also, the original questionnaire was in Swedish.)

Your background

1. Are you a boy or a girl? Girl, Boy
2. What grade are you in? 7, 8, 9, 1, 2, 3, 4
3. What school do you go to? _____________
4. Where... are you born? Sweden
    ... is your mother born? Another Nordic country
    ... is your father born? A country in the remaining Europe
5. How long have you lived in Sweden? All of my life
6. Who do you live with during the school week? Both of my parents
   - My father and someone else (spouse/partner)
   - My mother and someone else (spouse/partner)
   - Just my mother
   - Just my father
   - Sometimes my mother/sometimes my father
   - Other adults
   - By myself/am a lodger
   - Other
7. Do you have any of the following? You may check more than one response.
- My own room
- A pet
- My own TV
- My own cd/mp3 player
- My own mobile phone
- My own bicycle
- My own moped, motorcycle, EPA-tractor or car
- My own computer in my room
- My own musical instrument

Your friends and family
When we ask questions about your parents, we mean those who you regard as your parents, whether or not they are your biological parents.

8. Is it easy or difficult for you to make new friends?
- Very easy
- Rather easy
- Neither easy nor hard
- Rather difficult
- Very difficult

9. Is there anyone you can talk to about things that really worry you? You may check more than one response.
- No, no one
- Mother
- Father
- Sibling
- Adult relative
- An adult in school
- Other adult
- Friend
- Boy or girlfriend
- Someone else, who? ______
10. How important is it in your home with the following? Check one response on each row.

- To tell who you spend time with
- To take care of your school work
- To be home a certain time
- To not play truant from school
- How to behave in the company of others
- How to use your money

- Very important
- Rather important
- It differs
- Not that important
- Not at all important

11. Do your parents demand that you, beforehand, tell them what you are going to do if you want to go out, for example, on a Friday night?

- Yes, always
- Most of the time
- Sometimes
- Rarely
- No, never

12. How do you agree with the following? Check one response on each row.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

- I can talk to my parents about almost everything
- I enjoy spending time with my parents
- I find it easy to talk about feelings with my parents
- I can always trust my parents when it really matters
- I am involved in making family decisions about things that concern me
- My parents give me many opportunities to do fun things with them
- My parents praise me when I do something good
Your health

13. How do you feel?
   - Very good
   - Rather good
   - So, so
   - Rather bad
   - Very bad

14. During the last 12 months, how often have you experienced the following? Check one response on each row.
   - Headache
   - Stomach ache
   - Backache
   - Difficulties falling asleep
   - Felt stressed because of school
   - Felt stressed in your leisure time
   - Every day
   - Several times a week
   - Once a week
   - A few times per month
   - Seldom if ever

15. How often do you eat nutritious meals an ordinary week?
   Check one response on each row.
   - Breakfast
   - Lunch
   - Dinner
   - Every day
   - 4-6 days
   - 1-3 days
   - Seldom if ever
   - Do not know

Life in school

16. How are you satisfied with school?
   - Very good
   - Rather good
   - So, so
   - Rather bad
   - Very bad

17. Have you felt offended or bullied by school mates over the last 12 months?
   - Yes, once
   - Yes, several times
   - No (move to quest. 20)
<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Did you tell an adult last time it happened?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>19. Did you get any help?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>20. Have you felt offended or bullied by an adult in school over the last 12 months?</td>
<td>Yes, once Yes, several times No (move to quest. 23)</td>
</tr>
<tr>
<td>21. Did you tell an adult last time it happened?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>22. Did you get any help?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>23. Have you ever been involved in offending or bullying a class mate over the last 12 months?</td>
<td>Yes, once Yes, several times No</td>
</tr>
<tr>
<td>24. Have you played truant in the last 12 months?</td>
<td>No Yes, 1-2 times Yes, 3-5 times Yes, 6-10 times Yes, more than 10 times</td>
</tr>
<tr>
<td>25. How well do the following statements agree with your experience of school?</td>
<td>Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree Do not know</td>
</tr>
<tr>
<td>- There are clear rules for how we should behave in school</td>
<td></td>
</tr>
<tr>
<td>- The teachers praise me if I do something good in school</td>
<td></td>
</tr>
<tr>
<td>- In this school, I learn important things</td>
<td></td>
</tr>
<tr>
<td>- The students’ opinions are taken seriously</td>
<td></td>
</tr>
<tr>
<td>- The students are involved in planning and discussing the content of our education</td>
<td></td>
</tr>
<tr>
<td>- I know of my school’s preventive work on violence and degrading treatment</td>
<td></td>
</tr>
<tr>
<td>- I experience peace and quiet when I work at school</td>
<td></td>
</tr>
</tbody>
</table>
### Tobacco, alcohol and narcotics

26. Do you smoke?  
- No (move to quest. 28)  
- Very rarely  
- Only occasionally  
- Almost every day  
- Every day

27. How do you usually get a hold of cigarettes? You may check more than one response.  
- Buy myself  
- From friends  
- From parents  
- From someone else (18 years or older)

28. Do you use moist snuff?  
- No (move to quest. 30)  
- Yes, 1 can or less a week  
- Yes, 2-3 cans a week  
- Yes, 4 or more cans a week

29. How do you usually get a hold of the moist snuff? You may check more than one response.  
- Buy myself  
- From friends  
- From parents  
- From someone else (18 years or older)

30. If you smoke/use moist snuff, do you parents know?  
- Yes  
- No  
- Do not know  
- I do not smoke or use moist snuff

31. Have you ever drunk alcohol? Include light beer ("folköl"), medium strong or strong beer, wine, strong cider, alco pops or strong spirits.  
- Yes, once (move to quest. 38)  
- Yes, several times  
- No (move to quest. 38)
32. How often do you drink alcohol?  
   Check one response on each row.  
   - At least once a week  
   - 1-3 times a month  
   - A few times a year  
   - Once a year or less  
   - Never  
   - Light beer (“folköl”)  
   - Medium strong/strong beer  
   - Alco pops/strong cider  
   - Wine  
   - Strong spirits  

33. How do you usually get a hold of alcohol? You may check more than one response.  
   - Buy myself  
   - From siblings  
   - From friends or friends’ siblings  
   - From someone else (18 years or older who treats me)  
   - From someone else (18 years or older who buys for me)  
   - From restaurant, pub or similar  
   - Produce myself  
   - From parents (with permission)  
   - From parents (without permission)  
   - Some other way: ___________  

34. If you drink strong spirits, how often do you drink homemade strong spirits?  
   - Do not drink spirits  
   - Never homemade spirits  
   - Rarely homemade spirits  
   - Often homemade spirits  
   - Always homemade spirits  

35. Do you drink so much alcohol that you feel drunk?  
   - Yes, at least once a week  
   - Yes 2-3 times a week  
   - Yes, once a month  
   - Yes, 1-6 times a year  
   - More seldom if ever
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>36. Have you ever used prescription medicine with alcohol?</td>
<td>- Yes, once&lt;br&gt;- Yes, several times&lt;br&gt;- No</td>
</tr>
<tr>
<td>For example mixed pills with beer.</td>
<td></td>
</tr>
<tr>
<td>37. Do your parents know that you drink alcohol?</td>
<td>- Yes&lt;br&gt;- No&lt;br&gt;- Do not know</td>
</tr>
<tr>
<td>38. Have you ever sniffed?</td>
<td>- Yes, once&lt;br&gt;- Yes, several times&lt;br&gt;- No</td>
</tr>
<tr>
<td>Include solvents, glue, thinner, solution, gas from lighter, gasoline</td>
<td></td>
</tr>
<tr>
<td>or similar.</td>
<td></td>
</tr>
<tr>
<td>39. Have you ever used narcotics?</td>
<td>- Yes&lt;br&gt;- No (move to quest. 44)</td>
</tr>
<tr>
<td>For example hash, marijuana, amphetamine, ecstasy, LSD, cocaine, heroin</td>
<td></td>
</tr>
<tr>
<td>or GHB.</td>
<td></td>
</tr>
<tr>
<td>40. How did you get a hold of the narcotics?</td>
<td>- Purchased from someone&lt;br&gt;- I do not know&lt;br&gt;- Purchased from someone I have heard of but do not know personally&lt;br&gt;- Purchased from friends&lt;br&gt;- Purchased from someone else I know&lt;br&gt;- Dealt myself&lt;br&gt;- Obtained directly from doctors&lt;br&gt;- Been treated by friends&lt;br&gt;- Been treated by older brother or sister&lt;br&gt;- Some other way. How? ________</td>
</tr>
<tr>
<td>41. Would you be willing to use narcotics again?</td>
<td>- Yes&lt;br&gt;- No&lt;br&gt;- Do not know</td>
</tr>
<tr>
<td>42. How many times have you used narcotics in the past month (30 days</td>
<td></td>
</tr>
<tr>
<td>from yesterday)?</td>
<td>- None (move to quest. 44)&lt;br&gt;- 1 time&lt;br&gt;- 2-4 times&lt;br&gt;- 5-10 times&lt;br&gt;- 11-20 times&lt;br&gt;- More than 20 times</td>
</tr>
</tbody>
</table>
43. What did you use then?
   - Cannabis (hash, marijuana)
   - Ecstasy, amphetamine
   - GHB
   - Other: __________

**Threats and violence**

44. Has someone deliberately hit you, kicked you or exposed you to other kinds of violence at some point within the last 12 months, so you got hurt so much that you had to visit a nurse, doctor or dentist?
   - Yes, once
   - Yes, several times
   - No (move to quest. 46)

45. Where did it happen last time?
   - At school or in the school yard
   - In my home
   - In someone else’s home
   - On the bus/train, stop/station
   - Elsewhere (e.g. street, disco, youth center)

46. Has someone deliberately hit you, kicked you or exposed you to other kinds of violence at some point within the last 12 months, so you got hurt, but did not need to seek medical care?
   - Yes, once
   - Yes, several times
   - No (move to quest. 48)

47. Where did it happen last time?
   - At school or in the school yard
   - In my home
   - In someone else’s home
   - On the bus/train, stop/station
   - Elsewhere (e.g. street, disco, youth center)

48. Have you within the past 12 months been threatened to that you felt afraid?
   - Yes, once
   - Yes, several times
   - No (move to quest. 50)
49. Where did it happen last time?  
- At school or in the school yard  
- In my home  
- In someone else’s home  
- On the bus/train, stop/station  
- Via chat or e-mail  
- Elsewhere (e.g. street, disco, youth center)  

Crime  

50. Have you ever within the last 12 months suffered from... Check one response on each row.  
- Yes, once  
- Yes, several times  
- No  
- Someone stealing your bike  
- Someone stealing your money  
- Someone stealing your mobile phone  
- Someone stealing some other valuable thing from you  

51. Have you ever in the past 12 months done the following things? Check one response on each row.  
- No  
- 1-2 times  
- 3-5 times  
- 6-10 times  
- 11-50 times  
- More than 50 times  
- Deliberately destroyed telephone booth, street light, window, someone’s bicycle or something else that was not yours  
- Done graffiti, so called “tags”, or other words with ink or spray paint somewhere  
- Stole (shoplifted) something in a shop or department store  
- Carried a knife with you (as weapon) when you have gone outside
Your leisure time

52. Are you currently in any/some of the following associations/organizations? You may check more than one response.

- Sports club
- School association
- Outdoor association
- Religious association
- Sobriety association
- Cultural association, such as music, dance or theatre
- Immigrant association
- Hobby association, motor club, crafts association etc.
- Environmental organization
- Political organization/party
- Animal rights association
- Humanitarian organization, such as human rights
- Other association/organization for social issues
- Computer association, such as LAN
- Games association, such as role-playing, live action role-playing, board games
- I am a member of an association/organization, but none of the options above fit
- I am NOT a member of any association/organization

53. During a typical week, Monday to Sunday, how many days do you do the following in your free time? Check one response on each row.

- Read books
- Follow the news on television, radio or in the newspaper
- Have friends over in your house
- Spend time at friends’ houses
- Meet friends somewhere else than at someone’s house
- Be completely unoccupied and have plenty of time to do exactly what you want to do, for example chill out, listen to music or do something else that you feel like at the moment
54. How often do you do the following things in your leisure time?  
Check a response on each row.  
- 3 times or more per week  
- 1-2 times per week  
- A few times per month  
- A few times per year  
- Never  

- Exercise within an organization/club  
- Exercise but NOT within an organization/club  
- Go to sporting events without participating myself  
- Go to the movies  
- Go to a café  
- Go to a concert/music event  
- Go to a youth center  
- Go to a theatre/ballet  
- Go to a museum/exhibition  
- Go to a disco  
- Spend time outdoors/forest/sea/green areas  
- Sing/play instrument, paint, sew or other creative activities  
- Surf the Internet  
- Deal with computer networks such as LAN  
- Chat on the Internet  
- Fix cars/mopeds or other technical stuff  
- Play role-playing games, live action role-playing, board games  
- Visit fast food restaurants  
- Visit private parties  
- Visit shopping centers, clothing stores  
- Visit music rehearsal premises  
- Visit a church  
- Visit an arcade/pool hall  
- Visit a library  

55. What is most important when you choose leisure activities?  
Check only ONE response.  
- Parents' wishes  
- Good leaders  
- Friends are also involved  
- My own interest  
- Time fits  
- It is not too expensive  
- Other: ____________________
56. A typical weekday, approximately how many hours... Check one response on each row.
- 5 hours a day or more
- 3-4 hours a day
- 1-2 hours a day
- Less than one hour a day
- Not at all

- Do you use the computer (except for in your school work)?
- Do you watch TV, VCR or DVD?

57. Is there, according to your opinion, enough to do in your leisure time in the area where you live?
- Yes
- No

58. In which of the following places do you feel safe? You may check more than one response.
- Outside, in the area where I live, during the day
- Outside, in the area where I live, at night
- In nature, near where I live (e.g. forest, groves and parks)
- On my way to and from school
- In the classroom
- During breaks in school
- None of these

**Future**

59. For you personally, what is your view of the future?
- I see a very bright future
- I see a rather bright future
- I do not see a bright or a dark future
- I see a rather dark future
- I see a very dark future
Appendix 2. Interview guide

- Are you aware of the results from the survey conducted in the fall of 2010?
- From whom and in what way(s) have you been informed about the results?
- What do you think about the way(s) in which the survey results were disseminated to you?
- The school personnel in your district/school: have they received information about the survey results? If no: why? If yes, how?
- Have the students been informed about the survey results? If no: why? If yes: how?
- Have the parents of your students been informed about the survey results? If no: why? If yes: how?
- What do you think the key survey findings are and why?
- How do you rate the interest and knowledge of the school personnel to analyze and interpret the results from the survey?
- Will you (or have you already started to) use the survey results in your district/school? If no: why? If yes: how?
- Have the survey results been beneficial to you? If no: why? If yes: how?
- Can you give examples of concrete activities that have been planned within your district/school as a direct consequence of knowledge you have gained through the survey results?
- What would facilitate for you to use the results in a more constructive way in your district/school?
- What type of additional information (data, analysis, reports) do you use as basis for decisions regarding students’ health and lifestyle?