

Anne Siri Fallet Mosand

Self-esteem in adolescence: The role of physical activity

Master's thesis in Health Science

Supervisor: Unni Karin Moksnes

August 2020

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Norwegian University of Science and Technology
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Summary

The adolescent period is a time with many rapid developments, including bodily-, psychological- and social changes. Studies have shown that self-esteem in adolescence may influence different health outcomes both in the short term and in the long term, and it can therefore be relevant to have knowledge about what influences self-esteem in this period. Physical activity is known to have many positive effects on the physical health, and there are studies indicating that it may have positive effects on self-esteem as well. However, the found associations are often weak, and results vary between studies, motivating further research on this topic. This master's thesis therefore looks at the association between physical activity and self-esteem in adolescents. It consists of two separate, but interconnected articles: one theoretical article, which looks at the existing literature in the field, and an empirical article looking at the association in a sample of Norwegian adolescents.

To understand the association between physical activity and self-esteem in adolescents, it is important to have knowledge about the concepts involved, as well as the adolescent period itself. The theoretical article therefore looks at this more closely, in addition to investigating the theoretical and empirical literature on the association. The method is a literature search, and searches have been conducted for theoretical and empirical literature in both English and Norwegian. A recurring finding is that boys have higher self-esteem than girls, and that self-esteem in adolescence seems to be relatively stable. Moreover, some studies have found that boys are more physical active than girls, while other studies have not found such a difference between genders. Another recurring finding is that physical activity, both exercising and everyday activity, decreases during adolescence. Previous studies have also found a positive association between physical activity and self-esteem in adolescents. At the same time, there are studies who have not found an association, and of those who find an association many of the found associations are weak, and many studies have short duration.

Building upon the theoretical article, the empirical article carries out a quantitative investigation with statistical analyses; using data from the cross-sectional survey "Oppvekst I Bygder" which was conducted in autumn 2016 amongst adolescents aged 13-19 in Norway. Its aim is to investigate gender differences on self-esteem, stress and physical activity, and the association between physical activity, stress and the outcome self-esteem, controlled for socioeconomic status, age and gender. It is found that boys score significantly higher on self-esteem than girls, girls experience significantly more stress, while no gender difference is found in relation to physical activity. It is also shown that stress has a negative association with adolescents' self-esteem, while there is a significant positive association between physical activity and self-esteem in adolescents, controlled for all other factors.

As a whole, the findings in this master's thesis may contribute further insight into factors that are important for adolescents' self-esteem, and may therefore be of relevance to health promotion and preventive work among adolescents.

Sammendrag

Ungdomstiden er en tid med mange raske utviklinger, blant annet kroppslige, psykologiske og sosiale endringer. Studier har vist at selvfølelse i ungdomstiden kan ha betydning for ulike helse mål både på kort sikt og på lang sikt, og det kan derfor være relevant å vite hva som påvirker selvfølelsen i denne perioden. Fysisk aktivitet har som kjent flere positive innvirkninger på den fysiske helsen, og det er studier som indikerer at det kan være positivt for selvfølelsen også. Men sammenhengene er ofte svake, og resultatene varierer mellom studier, noe som motiverer for mer forskning på temaet. Denne masteroppgaven ser derfor på sammenhengen mellom fysisk aktivitet og selvfølelse hos ungdom. Den består av to separate, men sammenknyttede artikler: en teoretisk artikkel, som ser på den eksisterende litteraturen på feltet, og en empirisk artikkel som undersøker sammenhengen i et utvalg av norske ungdommer.

For å forstå sammenhengen mellom fysisk aktivitet og selvfølelse hos ungdom er det viktig å ha kunnskap om begrepene som er involvert, samt om selve ungdomstiden. Den teoretiske artikkelen ser derfor nærmere på dette, i tillegg til å undersøke den teoretiske og empiriske litteraturen på denne sammenhengen. Metoden er litteratursøk, og det er gjennomført søk etter teoretisk og empirisk litteratur på både engelsk og norsk. Et gjentakende funn er at gutter har høyere selvfølelse enn jenter, og at selvfølelsen i ungdomstiden viser seg å være relativt stabil. Noen studier har også funnet at gutter er mer fysisk aktive enn jenter, mens andre ikke har funnet en forskjell mellom kjønnene. Et annet gjentakende funn er at aktivitetsnivået, både trening og hverdagsaktivitet, går ned i løpet av ungdomstiden. Tidligere studier har også funnet en positiv sammenheng mellom fysisk aktivitet og selvfølelse hos ungdom. Samtidig er mange av disse sammenhengene små, studier har kort varighet, i tillegg til at det også er studier som ikke har funnet slike sammenhenger.

Ved å bygge på den teoretiske artikkel, så gjennomfører den empiriske artikkelen en kvantitativ undersøkelse med statistiske analyser ved hjelp av data fra tversnittundersøkelsen «Oppvekst i bygder» som ble gjennomført blant et utvalg norske ungdommer i alderen 13-19 år, høsten 2016. Dens mål er å undersøke kjønnsforskjeller i forbindelse med selvfølelse, stress og fysisk aktivitet, samt sammenhengen mellom fysisk aktivitet, stress og utfallsmålet selvfølelse, kontrollert for sosioøkonomisk status, alder og kjønn. Det blir funnet at gutter scorer signifikant høyere på selvfølelse enn jenter, jenter opplever signifikant mer stress, mens det ikke blir funnet noen kjønnsforskjell i forbindelse med fysisk aktivitet. Stress viser seg å ha en negativ sammenheng med ungdoms selvfølelse, mens det er en signifikant positiv sammenheng mellom fysisk aktivitet og selvfølelse blant ungdom, kontrollert for alle andre faktorer.

Som en helhet kan funnene i denne masteroppgaven bidra med videre innsikt i faktorer som har betydning for ungdoms selvfølelse, og kan derav være av relevans for helsefremmende og forebyggende arbeid blant ungdom.

Preface

This master's thesis is a part of a master's degree in Health Science at the Norwegian University of Science and Technology (NTNU).

Style, structure and references

The thesis generally follows the NTNU style guide from the document "Mal for å skrive masteroppgave I Microsoft Word (.dotx)", which is available at: <https://innsida.ntnu.no/masteroppgave> (retrieved 12.06.20). The reference style used is *the American Psychological Association Style, APA, version 6*. The thesis consists mainly of two articles: a theoretical and an empirical. The empirical article is written in a format for a possible submission in the "Journal of Adolescence", which is a peer-reviewed journal with a focus on the adolescent period; the author guidelines for this journal are available at: <https://www.elsevier.com/journals/journal-of-adolescence/0140-1971/guide-for-authors> (retrieved 31.03.20).

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Abbreviations

SE	= Self-esteem
GSE	= Global self-esteem
RSES	= Rosenberg Self-Esteem Scale
PSE	= Physical Self-esteem
PA	= Physical Activity
PSPP	= Physical Self-Perception Profile
EXSEM	= The Exercise and Self-Esteem Model
SES	= Socioeconomic status
DALY	= Disability-adjusted life years

Main introduction

This master's thesis consists of two separated, but connected articles: one theoretical and one empirical. The overall aim of this thesis is to investigate the association between physical activity and self-esteem in adolescents. For this purpose, it is also important to understand the concepts involved. Another aim is therefore to investigate the adolescent period, self-esteem and physical activity based on theoretical and empirical literature, as well as how these concepts unfold in adolescence. Both physical activity and self-esteem are complex and large themes; therefore the main focus has been limited to these two constructs. Furthermore, since they might be impacted by other factors, the items age, gender, socioeconomic status and stress are also included in this thesis, first in the theoretical article to investigate previous empirical literature, and then in the statistical analyses in the empirical article.

Article one is a theoretical article. Its aims are to investigate: (1) the theoretical foundation of the adolescent period, the concepts self-esteem and physical activity, as well as how self-esteem and physical activity unfold in adolescence, based on theoretical and empirical literature; and (2) to investigate the theoretical and empirical foundation of the relationship between physical activity and the outcome self-esteem in adolescents. A literature search is performed to search for both theoretical and empirical literature. The article includes a presentation on the adolescent period, self-esteem and physical activity; the association between physical activity and self-esteem; as well as a discussion on the findings.

The second article is an empirical article. It builds upon the findings of the theoretical article and carries out an empirical investigation. The method in this article is quantitative, and uses data from the cross-sectional survey "Oppvekst I Bygder" which was conducted in autumn of 2016 in the southern part of the county Trøndelag in Norway, where adolescents in lower and upper secondary school participated. The aims of the article are to investigate: (1) gender differences on self-esteem, stress and physical activity; and (2) the association between physical activity, stress and the outcome self-esteem, controlled for gender, age and socioeconomic status. The statistical analyses were carried out using *IBM's SPSS Statistics, version 25 for Windows* and include an independent samples T-test, Pearson product-moment correlation coefficient and hierarchical multiple linear regression. The findings from these analyses are then presented and discussed in light of previous studies.

PAPER I

Investigation of the association between physical activity and self-esteem in adolescents

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Abstract

Introduction. Based on theoretical and empirical literature, this article investigates the adolescent period, self-esteem and physical activity, and the relationship between physical activity and the outcome self-esteem in adolescents. **Methods.** Extensive literature searches were performed in electronic databases, google scholar and Oria for theoretical and empirical literature. Only literature in English or Norwegian was included. The main search terms were "adolescence", "physical activity", "self-esteem", "mental health" and synonyms for these terms, as well as "age", "gender/sex", "stress" and "socioeconomic status". **Results.** The main findings are the following: Studies have found that most adolescents have a high and stable self-esteem, but that girls have lower self-esteem than boys. Adolescents undergo many changes and developments during the adolescent period. Both Norwegian reports and international studies find that physical activity decreases during adolescence and many adolescents do not reach the recommended amount of physical activity. Furthermore, studies have found an association between physical activity and self-esteem in adolescents. Among the main hypotheses for this association are that physical activity increases different physical self-perceptions, improved body image, or social- or biological factors that influence self-esteem positively. However, many of the association are small, and there are also studies that either do not find an association or have short duration. Lastly, there are different hypotheses about the causal link between physical activity and self-esteem, or that the relationship might be bidirectional. **Conclusion.** Self-esteem has an impact on adolescents' health, both in the short term and the long term. Physical activity can be positive for adolescents' self-esteem, but it may be more related to physical self-esteem.

Keywords: Self-esteem, adolescence, physical activity, mental health promotion.

1. Introduction

Adolescence is characterized by several physical, cognitive, biological, psychological, social and emotional developments (Compas & Reeslund, 2009; Sawyer et al., 2012). This rapid and large development makes the adolescent period unique (Compas & Reeslund, 2009). How adolescents handle these changes and transitions will also affect their health (Sawyer et al., 2012). It can make adolescents vulnerable to new risks, but also stronger with new protective factors and resources (Compas & Reeslund, 2009). In adolescence, lifestyle habits and behaviors establishes, which often follow into adulthood (Ozer & Irwin, 2009; Sawyer et al., 2012; Viner et al., 2012).

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Reports show that most adolescents in Norway are generally well-adjusted, doing well, have friends, have good relationship with parents, are homey and active in different leisure activities (Bakken, 2016; Samdal et al., 2016). However, some adolescents experience increased stress, pressure and worries, especially girls. Many adolescents in Norway experience stress, for instance 40 % of adolescents in upper secondary school report to feel very stressed (Bakken, 2016). Furthermore, health complains like abdominal pain, headache and pain in muscles, shoulders and neck are more common now (Bakken, 2016).

Mental health symptoms and disorders are a big health- and society challenge in Norway (Major et al., 2011). According to Folkehelseinstituttet (2015), mental health symptoms affect around 15-20 % of children and adolescents between 3-18 years old in Norway, and around 8 % have mental health disorders. Worldwide, mental disorders in adolescence make up 45% of the contributions to the disability-adjusted life years (DALY) in the age group 10-24 (Gore et al., 2011). Girls report more symptoms and the prevalence have increased over the last decade both in Norway and internationally (Bor, Dean, Najman, & Hayatbakhsh, 2014; Folkehelseinstituttet, 2015; Hagquist, 2010; Sletten & Bakken, 2016). The use of antidepressants is also increasing amongst adolescent girls (Folkehelseinstituttet, 2015). For boys, the trend seems to be stable, or even show a slight decrease (Folkehelseinstituttet, 2015; Hagquist, 2010; Sletten & Bakken, 2016). The risk of having mental health symptoms or disorder in adulthood increases if these are present in adolescence (Collishaw, 2015; Major et al., 2011). Moreover, mental health problems during adolescence can have many negative consequences, such as substance abuse, economic difficulties and school dropout (Samdal et al., 2016). From a society perspective, mental health disorders together with musculoskeletal diseases, stand for 56 % of the production loss and 28 % of the DALY in Norway (Helsedirektoratet, 2016). Major et al. (2011) writes that in Norway, the socio-economic cost of mental disorders is around 60-70 billion yearly (p. 17).

Based on the presented above, it is therefore of great need for preventing mental health symptoms and disorders, and to promote positive mental health. To promote positive mental health, one of the results can be that it also prevents the development of mental health symptoms/disorders (WHO, 2004a). One way in promoting and increasing positive mental health is by improving determinants with importance to mental health (WHO, 2004a). Coping resources and personal factors are a central aim. WHO (2004b) defines personal factors as "each person's ability to deal with thoughts and feelings, the management of life, and emotional resilience" (p.26). Both physical health and self-esteem (SE) are associated to this (WHO, 2004b) and to improve SE is recognized as one of the ways for promoting positive mental health (Major et al., 2011). Indeed, SE is also regarded as a protective factor, which can improve people's resistance against risk factors and development of mental health problems (WHO, 2004a).

Here, self-esteem (SE) is defined as "a positive or negative attitude toward a particular object, namely, the self" (Rosenberg, 1965, p. 30). High SE is associated with resilience to stress, life satisfaction, success in school and work, independence and positive social adjustment (Fox, 2003). Opposite, low SE is seen as a vulnerability factor (Major et al., 2011), associated with anxiety, depression, hopelessness and suicidal ideation (Fox, 2003). Lifestyle is also related to SE, where people with high SE tend to have a healthy diet, be more physical active and not smoke (Fox, 2003).

In adolescence, SE is highly important not only for a positive mental health, but also for behavior, functioning and physical health (Boden, Fergusson, & Horwood, 2008; Guindon, 2002; Orth & Robins, 2014). Because of the changes and transitions during this period, SE development is essential (Boden et al., 2008) and SE can play a role in how adolescents deal with this (Birkeland, Melkevik, Holsen, & Wold, 2012). In this regard, it is important to investigate factors that might influence SE. Among these possible factors is physical activity (PA).

PA is a common leisure time activity for adolescents. PA can be positive both for adolescents' physical- and mental health, as well as important for social interaction and support (WHO, 2017b). Moreover, as argued in Liu, Wu, and Ming (2015, p. 2), PA has several advantages: it is fairly cost-effective, easy accessible, can be self-sustaining and have few side effects compared to other interventions. Of course, PA is not only beneficial in adolescence, but throughout the life course. Physical inactivity is a worldwide problem (Kohl 3rd et al., 2012). In high-income countries, physical inactivity and a sedentary lifestyle has increased (Hallal et al., 2012). Kohl 3rd et al. (2012) writes that "physical inactivity is the fourth leading cause of death worldwide" (p.294) and Hallal et al. (2012) writes that "in 2009, physical inactivity was identified as the fourth leading risk factor for non-communicable diseases" (p.247). From a society perspective, physical inactivity has great socio-economic consequences, measured not only in health-care costs, but also in productivity losses and DAILYs (Ding et al., 2016).

Regarding adolescents, Hallal et al. (2012) writes that so many as 80.3 % of adolescents worldwide do not fulfill the recommendations of PA (p. 247 and p. 250). In Norway, a study by Anderssen, Helsedirektoratet, and Norges idrettshøgskole (2008) found that approximately 50 % of Norwegian 15 year olds do not fulfill the recommendations for PA. These findings are worrying for the public health as adolescents who are physical active gain several positive health outcomes, both short-term and long-term (Hallal et al., 2012). In addition, research show that PA during adolescence increases the chance that people are physical active later in life (Bauman et al., 2012).

Some studies have found that PA can be positive for adolescents' mental health, such as reducing depression, anxiety and improving SE (Biddle & Asare, 2011; Ekeland, Heian, & Hagen, 2005). In regards to PA's influence on SE, some of the hypotheses are that experiencing mastery, developing skills and competence and the social part of PA might increase SE (Fox, 2003; Lindwall & Aşçi, 2014). However, this research field is inconsistent. Some studies have not found an association between PA and SE (Kahn et al., 2008; Van Dijk, Savelberg, Verboon, Kirschner, & De Groot, 2016), while in studies where there is an association between PA and SE, the associations are small (Biddle & Asare, 2011). Because of these varied results, more research is called for (Ekeland et al., 2005; Lindwall & Aşçi, 2014).

New and updated research is also needed in this area as the adolescent period has changed. Puberty debuts at an earlier age and adolescents take on adult roles like marriage, time of pregnancy and job later in life. Social- and mass media and its ever-presence have a big role in their lives, affecting their lives both positively and negatively and changing sociocultural norms. The period now will be different from previous generations, with new opportunities and challenges to adolescents' health and life (Sawyer et al., 2012). Regarding PA, it has become more popular for adolescents to be healthy and fit, due to society's increased focus on health (Bakken, 2016). For instance, the amount of adolescents that exercise five times or more weekly has increased in

Norway (Seippel, Strandbu, & Sletten, 2011). Knowledge and research within health promotion and preventive work is also called for in Norway (Meld. St. 19 (2014-2015), 2015, pp. 15-16, 23-47) and by World Health Organization (WHO) (WHO, 2004a, pp. 15-19; 2004b, p. 59).

Aims

The main aims of this article are to investigate:

(1) the theoretical foundation of the adolescent period, the concepts self-esteem and physical activity, as well as how self-esteem and physical activity unfold in adolescence, based on theoretical and empirical literature;

(2) the theoretical and empirical foundation of the relationship between physical activity and self-esteem in adolescents.

2. Search for literature

This is a theoretical article with a purpose to get insight in the field of self-esteem and physical activity in adolescence; it is not a review article. The electronic databases used in search for literature were PubMed, PsycINFO, SPORTDiscus and Web of Science, as well as Google Scholar search engine and Oria¹. Oria was used for searches for both articles and books. Citations from reference lists were also done where it was applicable. Exploratory search was done first to find keywords, synonyms and MeSH terms. The search terms used were "adolescent", "adolescents", "adolescence", "youth", "teen", "teenager", "self-esteem", "mental health", "physical activity", "exercise", "sport" and "training". For the control variables the search terms were "socioeconomic status", "age", "gender" and "stress". Different search techniques were used, such as truncation signs, (example "adolesc*") and Boolean search technique (AND, OR). Self-esteem and physical activity are large themes. The searches were done mainly on title, but also some on title/abstract/keywords or topic. When conducting searches on just titles, self-esteem can be part of an article that uses the more general term "mental health". Therefore, some search was conducted with both these terms. Different combinations with the keywords were used depending on which theme was searched for.

Search for studies published between 2000 and 2018 were mainly done, but in order to include primary literature, example when searching for the origin of theories or models, searches without a year limit were also performed. General search to include reports from the Norwegian government, World Health Organization (WHO), Helsedirektoratet and Folkehelseinstituttet (FHI), were also performed.

Inclusion criteria were studies on the adolescent population. The age limit was mostly 13-19, but due to varying definitions and age cuts on adolescents, as well as that research often operates with the age range 10-20, articles with this age range were included. Articles where the sample deviated from this age group were excluded, although exceptions were done for some articles, mainly reviews, because these often include both children and adolescents. The language criteria were English or Norwegian. Another inclusion criteria were that the studies were published in peer reviewed journals. Articles were excluded if a specific sample was being investigated, such as chronic

¹ Oria is available at the link: <https://oria.no/>

somatic/physical diseases, autism, physical handicap, narcotic users, eating disorders, learning difficulties and psychotic or borderline conditions.

3. The theoretical and empirical framework

3.1 The biopsychosocial health model

There have been, and still are, many different ways to look at health and disease/illness. A dominant theory has been the biomedical model, which concentrates its focus on the body as a machine with its biological, physiological and biochemical components. The physical and mental is separated, and disease can be explained solely by physical causes (Espnes & Smedslund, 2009). Therefore, health is seen as the absence of disease (Espnes & Smedslund, 2009; Wills & Earle, 2007). Relevant for this paper is the biopsychosocial health model, which was introduced in 1977 by George L. Engel (Adler, 2009; Earle, 2007a). It was developed because Engel was critical to the biomedical model; it was believed that more than just the physical was the reason for disease. Social and psychological factors could also influence health, and with biological factors, these three domains became the center of the model, and thereby expanded the biomedical view (Alonso, 2004; Earle, 2007a; Espnes & Smedslund, 2009; Hatala, 2012; McLaren, 1998; Sarafino, 2008). The biological factors include the genetics and the structure and functions of the body's physiology. The psychological factors include, for example, personality, emotions or motivation of a person; and lastly, some of the social factors are the society, socioeconomic status, community, social support and family (Hatala, 2012; Sarafino, 2008). Further, health is also affected by how these factors interplay, each factor cannot be understood isolated, rather, they mutually influence each other (Falkum, 2008).

The biopsychosocial health model broadened the view on health, and patients were no longer seen as just an object (Borrell-Carrió, Suchman, & Epstein, 2004). Due to this, new aspects in the health field got more focus, such as prevention and health promotion (Espnes & Smedslund, 2009). Health promotion is about promoting and preserving health throughout life in the best possible way. To promote resources that strengthen the individual is a key factor (Espnes & Smedslund, 2009).

The biopsychosocial health model has been embraced by many and is still relevant today. It is frequently used in scientific research and in fields within health, medicine and psychology (Adler, 2009; Hatala, 2012). Even though the model is often used, it has been criticized. For instance, when health is viewed this widely, it enlarges the field of what healthcare can do, and can to some people seem invading on their lives (Earle, 2007a). Since the model has a wide focus, it can be difficult to prioritize between the factors and what they include (Hatala, 2012). Falkum (2008, p. 257) and McLaren (1998, p. 91) writes that the biopsychosocial model is not a scientific model. The reason for this is that it is seen as too general and comprehensive, with no explanation of causality, predictive hypotheses or course. It is only a framework, a call for a broader understanding (Falkum, 2008), a general theory with flaws (McLaren, 1998). In research, to include all the elements in the three factors in the model, demands data from multiple systems which can be difficult to obtain (Suls, Rothman, Stone, Smith, & Suls, 2004).

3.2 The adolescent period

For decades several people have tried to define the adolescence period (R. M. Lerner & Steinberg, 2009). It is difficult to establish when a child becomes an adolescent and when an adolescent becomes an adult. It varies across several factors, like chronological age, gender, cognitive skills, puberty, the role they have in the family and economic and sociocultural factors. Although, of course, different laws and regulations describes when individuals have different rights and responsibilities (Aagre, 2003; Earle, 2007b; Sawyer et al., 2012; Tonkonogi, Bellardini, & Vigestad, 2013). WHO (2011) define an adolescent as "a person between 10 and 19 years of age" (p. 2). In the literature several age-definitions are used, but common is to vary between 10-24 years old (Sawyer et al., 2012), as in this century people delay certain adult responsibilities/roles, like marriage, age of pregnancy and work life into the mid-20s (Côtè, 2009; Sawyer et al., 2012).

Adolescence is characterized by several physical, psychological, social and emotional developments. Puberty is an important part of this period and adolescents behavior, health and emotional wellbeing are all affected by this (Sawyer et al., 2012). Puberty leads to body changes such as height- and weight growth, hormonal changes (Susman & Dorn, 2009) and menstruation for girls. The timing, tempo and rhythm of these biological changes can vary amongst adolescents (Hollenstein & Loughheed, 2013). The brain is growing during this period, which explains the increase of capacity of thinking, reasoning, behavioral and other changes (Sawyer et al., 2012). Adolescence is also characterized by many transitions (R. M. Lerner & Steinberg, 2009). Viner et al. (2012, p. 1642) list up five big transitions for adolescents:

Learning: transition from primary to secondary schooling and from secondary to higher education. Work: transition from education into workforce. Health: transition to responsibility for own health. Family: transition from family living to autonomy, early marriage, and parenthood. Citizenship: transition to responsible citizenship (Viner et al., 2012, p. 1642).

In adolescence, parents start to let their children be more responsible and independent. Adolescents start to form their own identity, and decide more what they do. Adolescents slowly become their own leader in their own development (Kuhn, 2009). In late adolescence they have a wider range of skills, thinking and perspectives than what they have in early adolescence. As a result, conflicts with parents and friends reduces (Kvello, 2008).

Traditionally, the adolescent period has in the last century been classified as a period of "storm and stress" (Kvello, 2008; Susman & Dorn, 2009). Adolescents were viewed as "problems to be managed" (J. V. Lerner, Phelps, Forman, & Bowers, 2009, p. 552) and "as oppositional, emotionally labile, and in need of constant monitoring" (Susman & Dorn, 2009, p. 116). However, through the years new perspectives on adolescence has emerged, due to new findings, knowledge and understanding of adolescence (Hollenstein & Loughheed, 2013).

A central perspective on adolescence now is Positive Youth Development (PYD) (Eime, Young, Harvey, Charity, & Payne, 2013). The period is now considered to be a time of positive development, where adolescents are viewed to be competent and more mature (J. V. Lerner et al., 2009). In this perspective, all children and adolescents are viewed to have capability to positively develop, they are "resources to be developed" (Eime et al., 2013, p. 15). For example in a study of Norwegian adolescents by Bakken

(2016), he writes that most adolescents now are active, have many friends, are well-adjusted and have strong relationship with parents (p. 2). PYD is also a perspective which is used in research (Susman & Dorn, 2009), where the focus is to strengthen protective factors instead of reduction of risk-factors (Viner et al., 2012). The focus in PYD is as J. V. Lerner et al. (2009) writes on the strengths and the positive qualities of adolescents, and on the outcomes and habits that is viewed as favorable that they develop (p. 524).

Adolescents' lifestyle is highly influenced by the social context they interact in (Aarø & Klepp, 2009) and peer relationships is an important factor (Smith, 2010). Brown and Larson (2009) writes that peers are "one of the most important features of adolescence" (p. 74). The meaning of peer relationships evolves from childhood to adolescence. Peer relationship becomes more important, time spent together increases and adult supervision decreases (Brown & Larson, 2009). The relationships also get more complex, with different types of relationships. Furthermore, peer system levels can emerge, such as hierarchies based on status or prestige, and popularity becomes an important factor (Brown & Larson, 2009). Friendship can form a secure area where adolescents have the possibility to explore new things and to develop identity (Smith, 2010). However, due to adolescents' sensitivity to influence and imitation of behavior (Sawyer et al., 2012), peer relationships can also increase the likelihood of risk behavior such as alcohol consumption and tobacco use (Viner et al., 2012).

Other important factors that influence adolescents' lives are family and school (Aarø & Klepp, 2009; Brown & Larson, 2009; Kvello, 2008; Viner et al., 2012). Another context that has become more important for adolescents and dominate a lot of their time is digital- and social media (Bakken, 2016; Brown & Larson, 2009). Research have found both positive and negative effects of social- and digital media in adolescence (Best, Manktelow, & Taylor, 2014; Sawyer et al., 2012).

Viner et al. (2012) writes that for adolescents, the most important determinants of their health are national wealth, access to education, income inequality, safe and supportive families and schools, as well as supporting peers (p. 1641). Different health behaviors or health status in adolescence may not contribute to any immediate disease or other health problems, but can have a negative outcome later in life (Compas & Reeslund, 2009). Risk factors that can affect the development of non-communicable diseases at later age, like smoking, alcohol use, physical inactivity or obesity are all common to start in adolescence (Sawyer et al., 2012). Research shows that in the age group 10-24, unintentional injuries (12%), mental disorders (45%) and infectious and parasitic diseases (10%) are the biggest contribution to diseases (Gore et al., 2011; Sawyer et al., 2012) and alcohol, lack of contraception, iron deficiency, illicit drug abuse and unsafe sex are the primary risk factors for DALY (Gore et al., 2011).

3.3 Self-esteem

Self-esteem (SE) has been defined and conceptualized in different ways. One well-used definition of SE is the one of Rosenberg (1965). In this theory, SE is viewed as "a significant personality construct" (Guindon, 2010b, p. 7). Rosenberg (1965) defines self-esteem as "a positive or negative attitude toward a particular object, namely, the self" (p. 30). Here SE is a product of a person's self-evaluation of all their traits, which are then summed up to an overall opinion of ones' SE. How one evaluates these traits is based upon a reference that the person has established through childhood and adolescence. The traits can also have different weight, meaning that some characters are

more important for the individual than others (Guindon, 2010b). Guindon (2010b) writes that in Maslow's hierarchy of human needs, self-esteem is included as a basic need (p. 7). SE influences the individual in many ways, for example experience of life-satisfaction, well-being, functional behavior and motivation (Guindon, 2010b). Furthermore, Guindon (2002) writes that "what individuals choose to do and the way they do it may be dependent, in part, on their self-esteem" (p. 208).

Wells (2001) write that it is several ways people evaluate themselves which are the sources of SE (p. 305). To start, one source is *reflected appraisals*, which state that a person gets knowledge about oneself as to how people respond to them. These interactions with others can give a lot of information about oneself and how one is perceived by others. Second, *social comparison* is a central contributor to SE. Other people give an indication of the society and what is considered as "normal". Third, *self-attribution* is a person's own evaluation of one's own behavior and traits. Fourth, *identification* is about that individuals identifies with someone or an object that is highly evaluated, and by including this "membership" or identification in one's own self-concept, can positively affect SE. To be part of something and feel membership can influence SE highly (Wells, 2001).

There can be different types of SE, such as a global SE and a selective/specific SE (Guindon, 2010b). Guindon (2010b) defines global SE as "an overall estimate of general self-worth; a level of self-acceptance or respect for oneself; a trait or tendency relatively stable and enduring, composed of all subordinate traits and characteristics within the self." (p. 12), and specific/selective SE as "an evaluation of specific and constituent traits or qualities within the self, at times situationally variable and transitory, that are weighted and combined into an overall evaluation of self, or global self-esteem" (Guindon, 2010b, p. 12).

Both global self-esteem (GSE) and specific SE are essential and none of them can replace the other. Since they are different they are also relevant in different ways with different outcomes, and it is therefore recommended to distinguish between them, both in research and when working with SE in practice (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). According to Rosenberg et al. (1995) GSE is more strongly associated with psychological well-being, while specific SE is more strongly associated to behavior (p. 153). This view is also supported by research and literature (Ervin & Stryker, 2001; Guindon, 2002, 2010b). One of the reasons GSE may not relate so much to behavior is that competence, which is highly valued in specific SE, is not one of the most weighted values when it comes to GSE. Self-acceptance, self-respect and self-worth are the core values here. For example, one can have little competence in playing instruments, but this will not affect GSE so much unless playing instruments is highly valued by that person (Rosenberg et al., 1995). Admittedly, both types of SE can impact everything; GSE can affect behavior, and specific SE can affect psychological well-being (Rosenberg et al., 1995).

Furthermore, a person can have low specific SE about a trait, but still have a high GSE. However, if this trait is weighted as very important for this person, it can affect the person's GSE, and one must work with this specific SE to improve GSE (Guindon, 2002; Rosenberg et al., 1995). Next, Guindon (2002) writes that it is easier to change specific SE, compared to GSE (p. 207). But GSE is made up by many specific SE's, meaning that GSE can be changed (Guindon, 2002). This difference between GSE and specific SE can also affect the correlation with variables in research. For instance, when analyzing GSE

with behavior variables, there might be a weak correlation due to that GSE is more connected to mental health (Rosenberg et al., 1995). It is common to study both different types of specific SE and GSE (Boden et al., 2008; Ervin & Stryker, 2001; Guindon, 2010b). Longitudinal studies have found that GSE is a relatively stable construct for individuals (Kuster & Orth, 2013; Orth & Robins, 2014), but it can also change (Orth & Robins, 2014). Levels of SE can vary between age, gender, socioeconomic status (Guindon, 2010b) and ethnicity (Erol & Orth, 2011).

If a person has high SE, it does not necessarily mean that the person sees oneself as superior compared to others, but that the person feels "good enough". In depth, with high SE the individual accepts and respects who one are, knows about ones limitations and feels worthy. Even though one accepts who one are, there is also a desire to grow and improve as a person (Rosenberg, 1965). This is what high SE reflects in the Rosenberg Self-esteem Scale (RSES). High SE people are often confident, report more happiness and have better physical health (Guindon, 2010b). Opposite, individuals with low SE can have less respect for oneself, wishing one was different, feels self-disaffection (Rosenberg, 1965), inadequate, unworthy and focuses only at ones faults and weaknesses (Owens & King, 2001). Even though low SE can make life difficult, most live a normal life (Rosenberg & Owens, 2001).

Because SE is viewed as a basic human need, it is thought that people are drawn to maintain a good level of SE, protect it and improve it (Rosenberg et al., 1995). At the same time, an individual with high SE can also have some negative thoughts about oneself. Measured by the RSES, people with high SE just have the least of negative thoughts about themselves (Owens & King, 2001).

SE is of great importance to different areas of health and life (Orth, Robins, & Widaman, 2012). SE and mental health, both well- and ill being, are highly connected. Liu et al. (2015) writes that "a search of the DSM-IV-TR shows that the term "self-esteem" appears in 24 different diagnostic contexts as a criterion for disorders" (p. 2). Research have found that low SE is associated with depression and anxiety (Sowislo, Orth, & Hinshaw, 2013). Further, it is found that high SE is associated with well-being and success in different areas in life, such as health, relationships and work (Orth & Robins, 2014).

In research, there are many different scales to measure SE. The most common is the "Rosenberg Self-Esteem Scale" (RSES) (Ervin & Stryker, 2001; Guindon, 2010b). The scale measures global self-esteem. Guindon (2010b) writes that it is an "unidimensional measure of global feeling of self-worth and acceptance; estimates positive or negative feelings about the self" (p. 15). It is suitable for adolescents and through adulthood (Guindon, 2010b).

3.3.1 Self-esteem during adolescence

In the adolescent period, adolescents become more aware of themselves and who they are, what their qualities are, what they want to become etc. The period is unique, all the changes, transitions and developments make them think through this. Puberty can make them more aware of their body image (Rosenberg, 1965). This period can make them unsure of how to behave due to that their childhood is ending and adulthood is the next phase in life (Rosenberg, 1965). As a consequence, many adolescents can become too self-conscious and overthink (Demo, 2001).

There are many factors that influence adolescents' self-esteem (SE), including peers, parents, academic competence and sport competence (Demo, 2001; Smith, 2010). Adolescents are highly influenced by their peers and commonly compare themselves to others. The responses they receive from others on their behavior and feelings contributes to determine their self-evaluation and value (Demo, 2001; Richman, Hope, & Mihalas, 2010). Further, Smith (2010) writes that the major and strongest predictor to SE in adolescence is physical appearance and attractiveness (p. 125). Seidah and Bouffard (2007) found that 35 % of the adolescents in the study answered that physical appearance was very important and could define their SE, both genders included. To perceive ones appearance negatively is linked to low SE, while to perceive ones appearance positively is linked to high SE (Smith, 2010).

The level of SE in adolescence is important for many reasons. A report by Helsedirektoratet (2016) shows that among adolescent girls who had high symptom levels of negative mental health, only one of three reported of having high SE, whereas adolescents (both genders) who did not have mental health symptoms/disorders, then nine out of ten reported that they had a high SE (p. 24). In adolescence, research has found that low SE is associated with anxiety, depression (Bos, Huijding, Muris, Vogel, & Biesheuvel, 2010; Moksnes, Bradley Eilertsen, & Lazarewicz, 2016; Moksnes & Espnes, 2012), disruptive behavior and eating problems (Bos et al., 2010). Furthermore, it is found that resiliency can be a product of high SE (Boden et al., 2008), that it is a positive association between SE and life satisfaction (Moksnes & Espnes, 2013) and that SE can predict increased social support (Marshall, Parker, Ciarrochi, & Heaven, 2014).

Additionally, several studies show that SE level in adolescence predicts later outcomes in adulthood. Low SE in adolescence can predict depression in adulthood (Steiger, Allemand, Robins, Fend, & King, 2014). Boden et al. (2008) found that the risk for low levels of life- and relationship satisfaction, mental health problems and substance dependent in adulthood were higher for adolescents who had low SE, however, the associations were weak. Birkeland et al. (2012) found in their 17-year longitudinal study that adolescents with high SE had higher life satisfaction and less somatic complaints at age 30, compared to those who had low SE in adolescence.

3.3.1.1 Gender, age, socioeconomic status and self-esteem in adolescence

In Norway, a consistent finding in research is that boys score higher on SE than girls (Helsedirektoratet, 2016; Moksnes et al., 2016; Moksnes & Espnes, 2012). This is also found in international studies (Bachman, O'Malley, Freedman-Doan, Trzesniewski, & Donnellan, 2011; Boden et al., 2008; Schraml, Perski, Grossi, & Simonsson-Sarnecki, 2011; Seidah & Bouffard, 2007; Steiger et al., 2014). However, three studies found no gender difference in SE during adolescence (Erol & Orth, 2011; Orth et al., 2012; Van Dijk et al., 2016).

In Norway, to have a positive SE is most common during adolescence (Helsedirektoratet, 2016). Regarding age and SE, studies in Norway have found a small increase in SE during adolescence (Moksnes & Espnes, 2012) or no change in SE during adolescence (Moksnes et al., 2016). Birkeland et al. (2012) found in their longitudinal study that most Norwegian adolescents (87 %) had a high SE, and that it was stable, with a slight increase during adolescence. This trend is also found in international studies; showing that SE is either stable (Bachman et al., 2011; Morin, Maïano, Marsh, Nagengast, & Janosz, 2013; Van Dijk et al., 2016) or show a small increase during adolescence (Steiger et al., 2014). Conversely, one study found that SE decreases with

age during adolescence, although weakly (Seidah & Bouffard, 2007). In the review of longitudinal studies by Orth and Robins (2014) it was found that SE increases from adolescence to mid adult life, then decreases into older age.

Socioeconomic status (SES) is measured in different ways, but most commonly with occupation, education, income (economic) and neighborhood-related measures (Stalsberg & Pedersen, 2010). Because these variables/factors often are highly correlated, they can each be used as a measure of SES (Twenge & Campbell, 2002). Parents' SES can affect adolescents' environment, lifestyle and social resources (Major et al., 2011).

Regarding SES and SE in adolescence, Erol and Orth (2011) found no association between income and SE in adolescence. In the review and meta-analysis of Twenge and Campbell (2002), they found that there were a significant small positive association between SES and SE. This was also the case in adolescence, when they studied different age groups. Boden et al. (2008) found a significant association between low SES and lower level of SE, and Bachman et al. (2011) found that higher education in parents were positively associated with higher SE in adolescents, although weakly.

3.4 Physical activity

Physical activity (PA) is defined by WHO (2017a) as "any bodily movement produced by skeletal muscles that requires energy expenditure" (p. 1). This is also consistent with the Norwegian definition (Helsedirektoratet, 2008, p. 73). Exercise is a part of PA, defined as " a subcategory of physical activity that is planned, structured, repetitive, and purposeful in the sense that the improvement or maintenance of one or more components of physical fitness is the objective" (WHO, 2017a, p. 1). PA is often systematized into intensity, duration, frequency, mode (type of activity) and continuity (Michellini, 2015). PA have several benefits, such as improving skeleton and functional health, decreasing the risk of stroke, hypertension, depression, coronary heart disease, breast and colon cancer, risk of falls and are important for weight control and energy balance (WHO, 2017a, p. 1). According to WHO (2017a) physical inactivity is the fourth leading risk factor for global mortality.

3.4.1 Physical activity in the adolescent period

The international recommendation of physical activity (PA) is 60 minutes per day for children and adolescents, with moderate- to high-intensity (WHO, 2017b). Norway follows these recommendations (Helsedirektoratet, 2016). More PA beyond this will improve health, and the activity duration can be divided and completed throughout the day (Helsedirektoratet, 2008; WHO, 2017b). PA has several benefits for adolescents' physical health, such as improved cardiovascular system (Tonkonogi et al., 2013), stronger musculoskeletal tissue (muscles, bones, joints), improved movement control and coordination, as well as increases the chance that their body weight will stay within the healthy range (WHO, 2017b). PA can also improve mental health, where Biddle and Asare (2011) found that PA in adolescence can reduce depression and anxiety, improve SE, cognitive performance and academic achievement. The review also found that sedentary behavior was negative for adolescent's mental health. However, all these findings were small. Furthermore, PA can improve adolescents' social development as it can be an area for social interactions, making friends, learn teamwork and be a place to self-express (WHO, 2017b). PA can also promote mastery/coping, and thereby improve self-confidence (Wold, 2009). These benefits will help adolescents stay healthy throughout life and prevent disease and illness.

There are several aspects that are important when it comes to adolescents' PA. Firstly, it should be versatile, ensuring that all of their body parts will benefit and versatility also increase the possibility that they find an activity they like (Wold, 2009). Further, it should be fun, as it will raise the possibility that they will stay physical active (Rahl, 2010). Additionally, adolescence is a period where habits are made. Several studies show that PA during adolescence improves the possibility that they are active in adulthood (Bauman et al., 2012; Wright & Laverty, 2010).

One report shows that among Norwegian 15 year olds, only 58 % of the boys and 43 % of the girls meet the recommendations for daily PA (Helsedirektoratet, 2016, p. 26). Anderssen et al. (2008) had similar findings. In international studies, Ekelund, Tomkinson, and Armstrong (2011) found that only 30-40 % meet the PA recommendations, while Hallal et al. (2012) writes that 80.3 % of adolescents does not fulfill the recommendations of PA (p. 247 and p. 250). Measured in exercising, Bakken (2016) found that most adolescents do exercise, but that 12 % in junior high and 17 % in high school rarely or never exercise, and that the everyday activity is low. When it comes to adolescents PA level over time, a Norwegian study, Seippel et al. (2011), with data from 1992-2010, found that the exercise level of adolescents have been stable through these years, with a slight increase, especially with those who exercise very often. Internationally, Booth, Rowlands, and Dollman (2015) and Ekelund et al. (2011) also found that adolescents' PA level have been stable the last decades.

School can be the only arena for PA for some adolescents (Macdonald, Wright, & Abbott, 2010), it can fulfill up to 50 % of the recommended PA level (Booth et al., 2015) and has the advantage that all can participate (Heath et al., 2012). New technology and motorized transport has replaced areas where people used to be physical active, both in work and leisure time. Due to this, people are less physical active, especially in high income countries (Hallal et al., 2012). This is also current amongst adolescents (Booth et al., 2015; Hallal et al., 2012; Samdal et al., 2009; Samdal et al., 2016). The use of social media and screen time has strongly increased amongst adolescents, which is a reason to the decrease in everyday PA (Bakken, 2016; Bucksch et al., 2016; Samdal et al., 2009).

Adolescents are physical active in many ways. Fitness studio has become a popular arena for adolescents to be physical active. It is easy available, flexible and a social arena (Laverty & Wright, 2010). It offers different ways to be physical active, from group lessons to training with appliances individually (Seippel et al., 2011). Participation in sports can lead to positive development, due to that adolescents evolve, develop qualities and skills like self-control, persistence, responsibility, courage, learn to set goals, teamwork, maintain effort, emotional regulation (Joseph L Mahoney, Vandell, Simpkins, & Zarrett, 2009, p. 255), discipline, tolerance, respect and physical- and social skills (Fasting, 2009). There are many different sports, individual and teams, and the influence of sports may therefore be different (Joseph L. Mahoney, Larson, Eccles, & Lord, 2005; Joseph L Mahoney et al., 2009).

Many factors influence if adolescents are physical active or not. Joseph L Mahoney et al. (2009) writes that the most common are motivation, competence, interest, socioeconomic status, age, ethnicity, family, peers, neighborhoods, type of activities and school (p. 241). Other reasons why adolescents participate in PA include that it is fun (Joseph L Mahoney et al., 2009), for health reasons, to live a balanced lifestyle, for winning and competition (Bélanger et al., 2011; O'Flynn & Lee, 2010) and to gain/maintain a "fit/muscular/lean" body (Bélanger et al., 2011; Kahn et al., 2008).

3.4.1.1 Negative aspects of physical activity

PA is beneficial in many ways, but PA and exercise can also have some negative sides. For instance, when exercising too much there comes a point where the positive effects decrease. A consequence can result in overtraining syndrome (OTS), which has many negative symptoms, such as reduced well-being and mental health (Raglin, Wilson, & Kenttä, 2014). Further, exercise dependence can be negative for one's social, physical and psychological health, and PA/exercise can play a negative role in eating disorders and body dysmorphia (Cook & Hausenblas, 2014).

Furthermore, sport can be a place for violence, harassment, abuse and bullying (Fasting, 2009). High stress level can also be an outcome of competing sports and this stress experience can again lead to other negative outcomes, like use of steroids (Joseph L Mahoney et al., 2009; Scanlan, Babkes, & Scanlan, 2005). Western societies today tend to have a large focus on health, where PA is one of the aspects that is highly valued (Lindwall & Aşçi, 2014; Macdonald et al., 2010). Adolescents can feel guilt, have anxiety or even self-judge themselves if they do not exercise because they are not living up to what society/the culture "wants/demands" from them. This can, for example, be because many adolescents want to look good and have a fit body, and exercise is a way of gaining this (Macdonald et al., 2010). Additionally, amongst adolescents, Slater and Tiggemann (2011) found that in PA settings, both genders experience teasing, but girls the most. This involves teasing for body weight, physical skills and physical appearance, and this type of teasing was associated with different negative body-image outcomes. Further, aesthetic activities were associated with drive for thinness or muscularity, body shame, appearance anxiety and bulimic symptomatology, compared to non-aesthetic activities (Slater & Tiggemann, 2011).

3.4.1.2 Gender, age, socioeconomic status and physical activity in adolescence

In Norway, some reports have found that girls are less physical active than boys (Anderssen et al., 2008; Samdal et al., 2016). Bakken (2016) found that this seems to be leveling out, girls and boys are approximately equally physical active, while Seippel et al. (2011) found that girls were a little more physical active than boys. International studies have found that boys are more physical active than girls (Slater & Tiggemann, 2011; Stalsberg & Pedersen, 2010), while Schraml et al. (2011) found no difference between genders. Furthermore, there are some gender differences when it comes to types of PA. Girls are more physical active on their own or in activities such as dance, while boys are more active in sports (Bakken, 2016; Seippel et al., 2011). The gym is equally popular for both genders (Bakken, 2016; Seippel et al., 2011).

Regarding age, in Norway, PA decreases during adolescence, especially from around age 16 (Bakken, 2016; Samdal et al., 2009; Samdal et al., 2016; Seippel et al., 2011). What type of PA adolescents prefer also changes with age. In junior high school, organized activities like sports are most popular, but participation in sports decreases through high school. Time spent in fitness studio increases, both for girls and boys, through high school (Bakken, 2016; Seippel et al., 2011). In international studies it is also found that PA decreases during adolescence (Dumith, Gigante, Domingues, & Kohl III, 2011; Kahn et al., 2008; Stalsberg & Pedersen, 2010; Van Dijk et al., 2016).

Regarding the relation between socioeconomic status (SES) and PA in adolescence, Seippel et al. (2011) found that family economy did not matter whether Norwegian adolescents were physically active on their own or not, but that it influenced participation in sports and fitness studio. Further, adolescents' PA levels were not

influenced by their parents' occupation (Seippel et al., 2011). The study of Anderssen et al. (2008) on Norwegian 9- and 15 year olds, found no association between parents' education level and their PA level. Due to different ways to measure both SES and PA, different results are found in the review of Stalsberg and Pedersen (2010) on SES and PA in adolescence. The main findings were that 58 % of the included studies in their review showed that a higher SES was associated with higher PA level amongst adolescents (Stalsberg & Pedersen, 2010). Dumith et al. (2011) found that adolescents with low SES had a steeper decline in PA during adolescence. These findings are also in line with the qualitative study of Bélanger et al. (2011), who found that different aspects of activity costs was a reason why some adolescents quit or did not participate in PA.

3.5 The theoretical understanding of the relationship between physical activity and self-esteem.

There are different models and hypotheses that describe the relationship between physical activity (PA) and self-esteem (SE). Some of the models have similarities, but will still be presented, due to that they are widely used and referred to in this field and therefore seen as important when investigating this field. To begin, some relevant definitions: Based on the perspective that different types of specific SE influence global self-esteem (GSE), the specific SE relevant in this context is the physical self/physical self-esteem (PSE). In addition, PSE is highly connected to PA (Lindwall & Aşçi, 2014). The Physical Self is defined as "an individual's perception of him, or herself in the physical domain" (Lindwall & Aşçi, 2014, p. 85). According to Lindwall and Aşçi (2014), physical competence "refers to the broader perceptions and evaluations of one's body and its capacity for functioning and performing" (p. 94-95), while physical acceptance "refers to the perceived satisfaction the individual feels about different parts of his or her body" (p. 95).

3.5.1 Models on the relation between physical activity and self-esteem

There are two highly related models describing the association between PA and SE. These two have a theoretical basis and have gained empirical support, as well as being the most used in this field and are well validated (Fox, 2003; Lindwall & Aşçi, 2014). They are both based on Shavelson, Hubner, and Stanton (1976) hierarchical and multidimensional model of self-concept, which has in itself received the most empirical support (Fox, 2003; Lindwall & Aşçi, 2014).

One of these models was developed by Fox and Corbin (1989) and is called "Physical Self-Perception Profile" (PSPP). It describes the relationship between physical self-perceptions and global self-esteem (GSE). The model is multidimensional and hierarchical, where GSE is at the top, underneath follows physical self-worth (physical self-esteem), and below this are four subdomains: sport competence, physical strength, body attractiveness and physical conditioning (Lindwall & Aşçi, 2014). The lower down in the hierarchy, the more changeable the domains are viewed. The impact on GSE goes from the bottom of the hierarchy and up. An increase in the lowest level will lead to that the next level increases and so on. PA is at the bottom, so it is believed that PA will lead to an increase in the four subdomains, for example sport competence, and this again leads to an increase in PSE, which in the end leads to an increase in GSE (Lindwall & Aşçi, 2014).

The other model is the "Exercise and Self-Esteem Model" (EXSEM), developed first by Sonstroem and Morgan (1989) and later expanded by Sonstroem, Harlow, and

Josephs (1994). This multidimensional hierarchical model provides a theoretical understanding of the ways PA impacts GSE (Lindwall & Aşçi, 2014). It expands upon the PSPP model, but the principles are the same, with PA at the bottom, leading to improvements in the concepts higher up in the model; see Figure 1 for a visual representation of the model. At the top of the model, GSE is viewed as fairly stable, while the concepts lower in the model are viewed as more fluctuating and more susceptible to change (Sonstroem & Morgan, 1989). Essential to SE are feelings of personal control, effectiveness and self-determination. These are believed to appear as a result of increased competence (Fox, 2003). These mechanisms are included in the model because, based on SE theory, important factors for a good SE is a sense of mastery, to have the capacity to manage one self and the environment, and to have a personal competence (Sonstroem & Morgan, 1989).

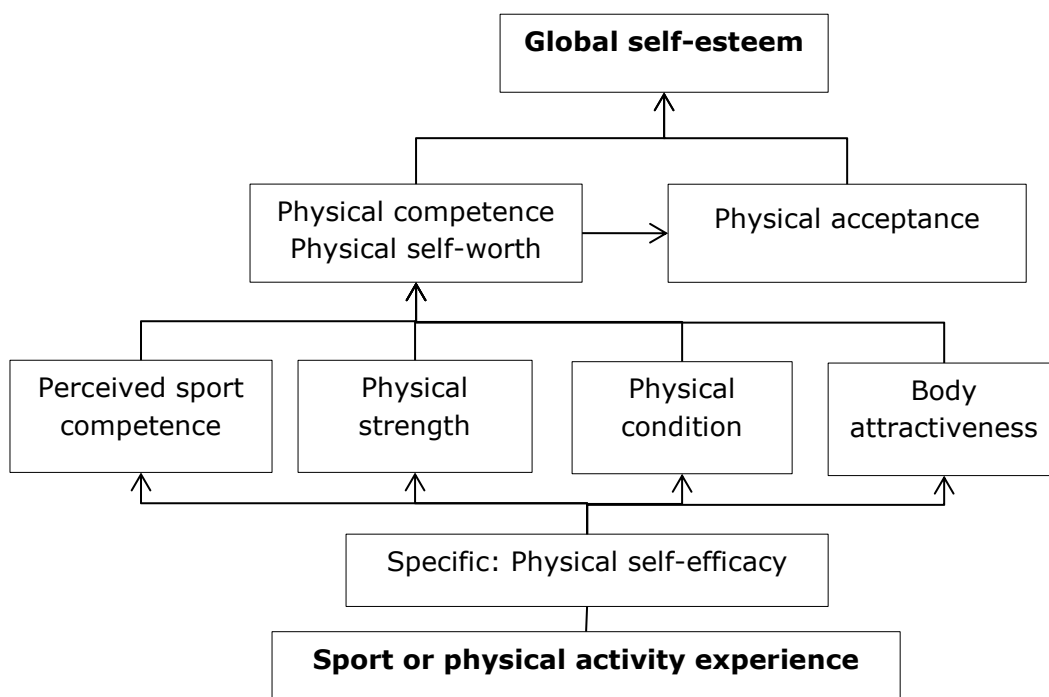


Figure 1. The expanded exercise and self-esteem model (EXSEM). Reprinted from Lindwall and Aşçi (2014, p. 95).

Based on the EXSEM and PSPP, it is believed that these are the main mechanism in the PA and SE relationship. According to Lindwall and Aşçi (2014), out of all the different areas that affect GSE, the area that has the largest influence is the physical self (p. 87). Furthermore, of physical self's four subdomains, the subdomain with the highest impact on the physical self is body attractiveness (Lindwall & Aşçi, 2014). Likewise, of these four subdomains, body attractiveness has been found to be the subdomain with the highest impact on GSE (Fox, 2003; Lindwall, Ascı, Palmeira, Fox, & Hagger, 2011; Lindwall & Aşçi, 2014). Therefore, the body is an important theme to address in the PA and SE relationship. The association many people have with an attractive body can be an explanation. Many view an attractive body as synonymous with SE, physical self-esteem (PSE) and health. SE is also viewed as strongly associated with good health (Lindwall & Aşçi, 2014). Moreover, what the ideals are in society and cultures, are strongly associated with GSE and physical self-perceptions. In western societies there has been

and still is, a large focus on body ideals, body maintaining and exercise. To have an attractive and fit body as well as having a good physical shape are ideals that are highly valued (Lindwall & Aşçi, 2014). Lindwall and Aşçi (2014) write that exercise is one of the most frequently used methods to achieve a body ideal (p. 87).

The last model which will be explained is the “biopsychosocial feedback model”, made by Lindwall (2004, p. 105). The model was made because of the varied theories and research in the PA and SE relationship, because of the complexity of PA and because of all the different ways PA impact humans (Lindwall & Aşçi, 2014). In research, the association between PA and SE is measured in many different ways, ranging from the use of models such as the PSPP and EXSEM, or concrete fitness measures (e.g. greater vo2, managing more sit ups), to other social aspects of PA. Therefore, to look at this relationship with a biopsychosocial perspective was proposed, combining and acknowledging all the elements, research and different theories into a model. Both psychophysiological-, biological-, psychological- and sociocultural factors of PA are seen as important mechanisms in this association (Lindwall & Aşçi, 2014). Lindwall and Aşçi (2014) writes that the model is not a scientific model that can be tested and should not be looked at as a complete unifying theory, but rather a dynamic framework for researchers and those working with these aspects (p. 97). The model proposes that PA/exercise leads to different effects on different levels, in a feedback system; see Figure 2. In different contexts/groups the importance/relevance of the effects may differ, in addition to that the effects may overlap, codevelop and interact (Lindwall & Aşçi, 2014).

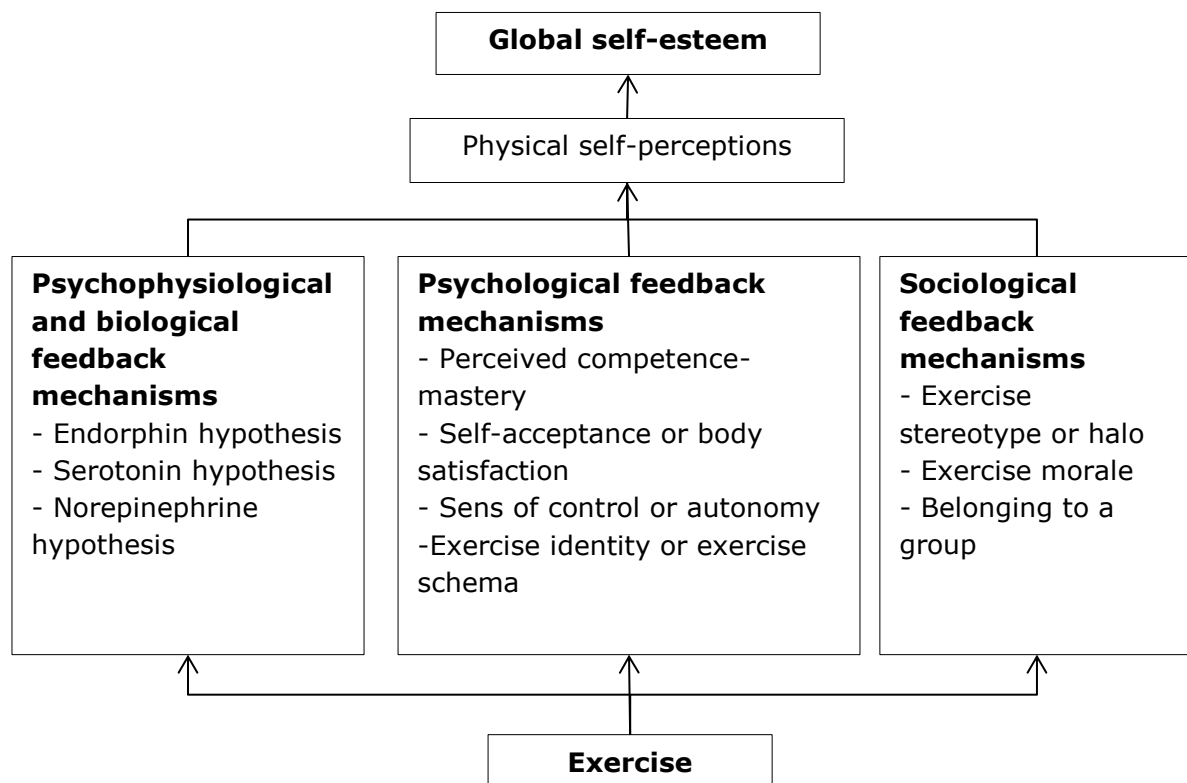


Figure 2. The biopsychosocial feedback model. Reprinted from Lindwall and Aşçi (2014, p. 97), which is reprinted from Lindwall (2004, p. 105).

Besides the elements listed up in the visual representation of the model (see Figure 2), in the psychological feedback mechanism box, one can add the aspect of when a person is physical active; there is the feeling as well as "an evidence" of having a body that works and being physically healthy, which positively influence PSE and GSE (Lindwall & Aşçi, 2014). In the sociological feedback mechanisms box, the feeling of belonging to a place is highly important for humans, for example being part of a team sport. Feedback and social support, for instance from peers or coaches, is also positive for SE (Lindwall & Aşçi, 2014). Further, this box also represent how people are influenced by elements in the society and culture, e.g. through values, norms, ideals etc. In this context, PA is in western societies both valued by itself, in addition to having certain associations to it that are also highly valued. These associations are: health, having self-discipline/control, being good, youthfulness etc., as well as the aspect of gaining/maintaining the body ideal of the culture. Therefore, when exercising, a person "fulfills" these associations which can make the person feel good about themselves, as well as gaining positive feedbacks from others because one is associated with these attributions by others as well (Lindwall & Aşçi, 2014).

Lubans et al. (2016, pp. 2-4) proposes a similar model to explain the relationship between PA and mental health, including SE, with almost the same hypotheses as those in the biopsychosocial feedback model presented above (Lindwall & Aşçi, 2014, pp. 97-98). Many of the biological hypotheses are not directly on SE, but on how PA affects biology, especially the brain. One of the reasons why biological effects of PA is believed to influence mental health, both well- and ill-being, is because the neurobiological effects impact cognitive function. Cognitive function is defined as "mental processes that contribute to perception, memory, intellect, and action" (Lubans et al., 2016, p. 2), and Lubans et al. (2016) writes that our cognitive function "provides a core foundation upon which mental health (both well-being and ill-being) is established" (p. 2). In this context, PA impacts biology, which impacts cognitive function, which might then in turn impact SE. In sum, the neurobiological hypotheses are about the changes in the anatomy of the brain as a result of PA (Lubans et al., 2016, pp. 2-3). Clow and Edmunds (2014) writes that researchers in this field believe that it is the many ways PA affects the brain that is the main reason for the impact on mental health and well-being (p. 11). For detailed description of the biological hypotheses, see Clow and Edmunds (2014), page 8-15 and Lubans et al. (2016), page 2-3.

3.5.2 Causality

Regarding the causality between PA and SE, there exist different hypotheses. On the one hand, the "Self-enhancement hypothesis" proposes that high SE leads to participation in PA. It is summarized by Lindwall and Aşçi (2014) as "that greater perceived competence for physical activity leads to greater participation in that behavior" (p. 85). When people believe that something will lead to success, they participate in it as society rewards achievement (Lindwall & Aşçi, 2014). On the other hand, the "skill-development hypothesis" proposes that PA leads to increased SE and is summarized by Lindwall and Aşçi (2014) as "participation in physical activity enhances self-esteem through increased competence in specific domains" (p. 85). It feels good to accomplish something and getting rewards, and it strengthens peoples believes about themselves. For example, when engaging in PA, one improves in different ways, such as strength, fitness parameters, conditioning, mastering skills or a specific type of activity etc., and this improvement will lead to improvement in SE (Lindwall & Aşçi, 2014). In sum, there are

hypotheses that causality can go both ways. It is also common to view the relationship as reciprocal (Lindwall & Aşçi, 2014).

3.6 The empirical basis of the relationship between physical activity and self-esteem in adolescents

In the systematic review of Ekeland et al. (2005) with 23 randomized controlled trials (RCT) on children and adolescents, age 3-20, they found that physical activity (PA) had a significant small treatment effect on self-esteem (SE), approximately 10 % difference from the control group. A review of reviews by Biddle and Asare (2011) found that PA can improve SE in children and adolescents, evident in 3/3 of the reviews examined. However, the effects were mostly small and studies with short duration. A longitudinal study by Van Dijk et al. (2016) on 158 Dutch adolescents with a mean age of 13,6 years, found that a decline in PA level was not associated with any change in SE over a 1-year period. This was also the case for those adolescents who increased their PA level. Next, a longitudinal study by Schmalz, Deane, Birch, and Davison (2007) on 197 girls, at age 9, 11 and 13, tested the causality of the PA and SE relationship. Results indicated that higher PA at age 9 and 11 predicted higher SE at age 11 and 13. Conversely, a higher SE at a young age did not predict higher PA at a later age.

The systematic review and meta-analysis by Liu et al. (2015) examined the effect of PA on SE and self-concept (SC), which included twenty-five RCT's and 13 non-randomized controlled trials (non-RCT) on children and adolescents, age 3-20. Their results showed that there was a general small significant positive effect on SE and SC. But when they separated the analyses into specific outcome scales, this result was only found for SC- and self-worth (SW) scales, not on SE scales. With the non-RCT's, there was no significant effect on any self-outcome. Lastly, the meta-regression found that the association between PA and the self-outcomes did not change based on different PA interventions (frequency, intensity, length, study-quality, population), except context and showed a stronger significant effect size between school/gymnasium interventions and self-outcomes, compared to other contexts.

The systematic review of Lubans et al. (2016), containing both RCT's and intervention studies, investigated the mechanisms in PA's effect on cognitive- and mental health (including SE) in youth, age 5-18. Six out of eleven studies found a significant positive effect of PA on SE, while the remaining five were non-significant. Furthermore, the findings included significant evidence for a causal link between several mechanisms of PA on SE. These mechanisms were physical appearance, physical self-concept/self-worth, physical self-efficacy, body image, perceived body attractiveness, -strength, -sport competence, -fitness and -athletic competence. Only one out of four studies investigating social acceptance or social competence as a mechanism in this relationship was significant positive (Lubans et al., 2016).

The systematic review of Eime et al. (2013) on children and adolescents found a significant positive association between performing sport and SE in two cross-sectional studies, three longitudinal studies and one qualitative study. There was a greater effect if the sport was either organized or a team sport. Performing sport was also associated with perceived physical appearance, physical competence, sport competence and physical self-esteem (PSE), which are all hypotheses about the mechanisms in the PA and SE relationship (Eime et al., 2013). Next, the longitudinal study by Kahn et al. (2008) found that at baseline, PA was positively associated with athletic self-esteem, but not with

global self-esteem (GSE), among adolescents. Athletic self-esteem and GSE did not predict any change in PA level two years later.

3.7 Stress

Sarafino (2008) defines stress "as the circumstance in which transactions lead a person to perceive a discrepancy between the physical or psychological demands of a situation and the resources of his or her biological, psychological or social system" (p. 63). This perspective comes from the theory by Lazarus and Folkman (1984) on stress, which is the most used definition of psychological stress (Suldo, Shaunessy, & Hardesty, 2008). Stressors are defined by Sarafino (2008) as "physically or psychologically challenging events or circumstances" (p. 62).

People vary in how they react to stress and stressors and how they evaluate situations as stressful (Lazarus & Folkman, 1984; Sarafino, 2008). These variations can be due to personal traits, such as personality, motivation, self-esteem (SE) and intelligence, and due to factors within the situation, such as low controllability, high demands, life transitions, uncertainty and unfavorably timing (Sarafino, 2008). Situation and personal factors interrelate when the individual faces stress (Lazarus & Folkman, 1984). People also vary in how they cope with stress. It is common to associate stress as bad, but to some degree, stress can also be good. However, because stress affects a person physically, psychological and can lead to unhealthy behavior, it can affect ones health (Sarafino, 2008). Chronic stress can disturb functions/systems in the brain and can be a risk factor for diabetes, cardiovascular disease, inflammation, hypertension (Clow & Edmunds, 2014) and lower immune system (Sarafino, 2008).

3.7.1 Stress in adolescence

The developmental changes and new experiences during adolescence are normal and some degree of stress is normal and unavoidable. It is when the amount of stress builds up to a point where adolescents cannot cope that it become harmful (Byrne, Davenport, & Mazanov, 2007; Moksnes & Espnes, 2011). These large and rapid changes can exceed the capacity that adolescents have to handle these changes, which may result in stress experience. With increased autonomy, higher demands in school and new responsibilities, might also add up to the amount of stress experienced in this period (Byrne et al., 2007; Moksnes & Espnes, 2011).

Adolescents experience stress in different areas. Byrne et al. (2007) has classified these into ten areas: home life, school performance, school attendance, romantic relationships, peer pressure, teacher interactions, future uncertainty, school/leisure conflict, financial pressure and emerging of adult responsibilities. Moksnes and Espnes (2011) found that seven of these areas are current in the Norwegian adolescent population. It is also common to classify adolescent stress sources in to normative stressors (e.g. developmental challenges, school transitions, puberty, higher demands in school), non-normative stressful life events (e.g. moving , divorce, deaths) and everyday problems (e.g. school pressure, parent-child conflict, peer group pressure) (Moksnes & Espnes, 2011, p. 601; Suldo et al., 2008, p. 274).

Many Norwegian adolescents experience stress, for instance 40 % of adolescents in high school feel very stressed (Bakken, 2016). Schraml et al. (2011) had similar findings among Swedish adolescents. Furthermore, a consistent finding in research is that girls score higher on stress than boys, both in Norway (Moksnes et al., 2016; Moksnes, Espnes, & Haugan, 2014) and international (Byrne et al., 2007; Charbonneau,

Mezulis, & Hyde, 2009; Hankin, Mermelstein, & Roesch, 2007; Schraml et al., 2011). Girls and boys also vary in which areas they report highest stress (Byrne et al., 2007; Charbonneau et al., 2009; Hankin et al., 2007; Moksnes et al., 2016; Moksnes et al., 2014). Moreover, research has found that stress and some of the stress areas weakly increase during adolescence, especially for girls (Byrne et al., 2007; Moksnes et al., 2016; Moksnes & Espnes, 2011).

Since adolescents are developing, high stress can affect the development/learning of social skills, cognitive function and decision making (McLoyd et al., 2009). Stress during adolescence is linked to a health risk lifestyle, such as alcohol use, obesity, physical inactivity and cigarette smoking (Byrne et al., 2007). The study by Moksnes et al. (2016) on Norwegian adolescents, age 13-18, found that higher stress is associated with depressive symptoms, as well as strong significant inverse correlations between SE and the seven stress domains. In the study of Schraml et al. (2011) on Swedish 16-year olds it was found that low global self-esteem (GSE), high demands, sleep disturbance and low social support were both correlated to stress and contributed to stress symptoms. Other researchers have found that high stress in adolescence is related to depressive symptoms, anxiety (Byrne et al., 2007; Charbonneau et al., 2009; Hankin et al., 2007; Moksnes et al., 2014) and negatively correlated with life satisfaction (Moksnes & Haugan, 2015) and SE (Byrne et al., 2007; Moksnes & Espnes, 2011).

4.0. Discussion

4.1 The biopsychosocial health model

The biopsychosocial health model is relevant for many reasons. The model broadens the view on health; health is not only the absence of disease. Health can also be strengthened, improved and maintained (Espnes & Smedslund, 2009). This perspective is also relevant due to its focus on both prevention and health promotion. Both WHO (WHO, 2004a, pp. 15-19; 2004b, p. 59) and the Norwegian Ministry of Health and Care Service (Meld. St. 19 (2014-2015), 2015, pp. 15-16, 23-47) emphasize the importance of promoting a good mental health, due to the rise in mental health problems and diagnoses. This can be done in many ways, among them is improving self-esteem (SE) and to maintain a high SE level (Major et al., 2011). Physical activity (PA) is also relevant in health promotion. PA can strengthen physical- (Lubans et al., 2016; WHO, 2017b), mental- (Biddle & Asare, 2011; Eime et al., 2013; Lubans et al., 2016) and social health (Eime et al., 2013; Lubans et al., 2016).

The biopsychosocial health model also broadens the understanding of what factors that influences health, as well as emphasizing the importance to consider the different factors which influences health. For instance, regarding PA in adolescence, there are many factors that contribute if adolescents are physical active or not, for example their social-, economic-, geographical- and cultural context, as well as their previous experiences with PA (Wright & Laverty, 2010). Regarding social factors, such as that parents cannot afford to buy the necessary clothes, equipment or membership fee in sports teams, can lead to that adolescents cannot participate in certain forms of PA (Bélanger et al., 2011; Hamer, 2014; Seippel et al., 2011). As a consequence, this can adversely affect adolescents' health as it can contribute to they not achieving the recommended amount of PA. Therefore, it is important to have a broad view, acknowledging the different areas when promoting PA and SE in adolescence.

Furthermore, the effects of PA on health in general and the effects PA may have on SE are wide. Because of this, Lindwall and Aşçi (2014, pp. 97-99) proposed a biopsychosocial view to understand PA's effect on SE, and Lubans et al. (2016, pp. 9-10) proposed a fairly similar model regarding PA's many ways of influencing cognitive- and mental health, such as SE. This represents the wide range of influence PA have on health, and in regards to SE research has found that neurobiological effects (Lubans et al., 2016), psychological effects such as increased physical self-esteem (PSE) (Eime et al., 2013; Lubans et al., 2016), perceived physical competence, physical appearance, body image, physical self-efficacy (Lubans et al., 2016), and social effects such as social acceptance (Lubans et al., 2016), are ways PA positively influence SE. Hence, SE can be improved in many different ways through PA. Therefore can a biopsychosocial view also be relevant in the PA and SE relationship.

Some of the criticism towards the biopsychosocial health model is that it is too large and difficult to measure (Hatala, 2012; McLaren, 1998; Suls et al., 2004). On the other hand, Lindwall and Aşçi (2014, p. 97) and Lubans et al. (2016, p. 9) who have proposed a biopsychosocial view on the relation between PA and SE, emphasizes that it is not a unifying complete theory, it is rather a framework, a way of understanding something and acknowledging the different ways our health is affected.

4.2 Self-esteem in adolescence

As presented in chapter 3.3 and 3.3.1, self-esteem (SE) has large impact on both health and life. In adolescence, low SE has been found to be related to negative health outcomes, while a high SE is related to positive outcomes (Bos et al., 2010; Moksnes & Espnes, 2013). Furthermore, SE level in adolescence has also been found to be associated with later life outcomes, for instance high SE in adolescence is associated with higher life satisfaction and less somatic complaints in adulthood (Birkeland et al., 2012). These findings highlight the public health relevance, and the importance of both strengthening adolescents' SE and that adolescents maintain a high SE.

4.2.1 Gender

As was seen in chapter 3.3.1.1, there are gender differences in SE during adolescence; that is to say, girls have lower SE than boys. There can be many possible explanations for this. For instance, how one is socialized can be different based on gender, which can lead to that how girls and boys think about themselves can be different. Moreover, they can use different values and criteria when they evaluate their worth, and weight these differently (Demo, 2001). Therefore, their SE will be influenced differently in certain situations. Gender can also have different expectations related to it and how adolescents relate to these may also affect SE (Statham & Rhoades, 2001).

Another reason for the gender differences in SE amongst adolescents may be due to physical appearance/acceptance. As explained in chapter 3.3.1 and 3.5, perception of one's body has strong association to SE. For example, according to Smith (2010) the major and strongest predictor to SE in adolescence is physical appearance and attractiveness (p.125). Boys tend to be more acceptant and positive about their body (Côtè, 2009), whereas girls can have a more varying and negative view on their body (Côtè, 2009; Richman et al., 2010; Smith, 2010). A reason can be the body ideals the media promotes, which have been criticized for being unrealistic and that there is a sexualization of the female body. This can make girls more self-conscious (Côtè, 2009; Smith, 2010). People in mass media or peers become the new role models for

adolescents, whereas before, parents were the role models (Smith, 2010). However, studies have found that physical appearance is equally important for both genders and that it affects their SE (Seidah & Bouffard, 2007). It is therefore important not to forget boys in this regard; boys can be equally affected as girls (Richman et al., 2010). In sum, there is complexity in physical appearance, because to feel good about one's body and appearance is positive for one's SE, but if appearance determines one's self-worth or to have a negative body image is linked to low SE (Seidah & Bouffard, 2007; Smith, 2010). Interventions should therefore focus on promoting a healthy body image for adolescents.

Another reason for the gender difference can also be because girls report of higher stress and worry (Bakken, 2016), and stress is found to be negative for adolescents SE (Moksnes et al., 2016). The gender differences may also be due to differences in self-reporting, where girls can be more willingly to evaluate and report on sensitive problems (Moksnes & Espnes, 2012).

4.2.2 Age

"Storm and stress" was long the perspective on the adolescent period (Susman & Dorn, 2009), while now there is a more positive view of this period. As seen in chapter 3.3.1.1, most studies found that SE is either moderate/high and stable, or shows a slight increase during adolescence. In line with the theory of PYD this can indicate that most can positively develop and handle this unique period. For example, Morin et al. (2013) writes that since at least 80 % of the adolescents had a stable, moderate or high SE in their longitudinal study, it shows that they can manage with the changes and transitions well (p. 1981). Birkeland et al. (2012) concludes with the same in their study (p. 51). Although, it is important not to forget that there are still some adolescents that have low SE and low SE is a risk factor that can have many negative consequences, both in adolescence and for later life.

Another reason that research has found SE to be stable or show a slight increase during adolescence, can also be due to the development, maturation and self-understanding in this period, which can lead to SE improving (Demo, 2001). In addition, based on SE theory and research, global self-esteem (GSE) is viewed as fairly stable, which takes time to change (Guindon, 2002; Orth & Robins, 2014; Sonstroem & Morgan, 1989). However, one study found that SE decreased during adolescence (Seidah & Bouffard, 2007). That SE decrease in early adolescence is believed to be because of all the changes occurring in this period, such as that school becomes more serious, social comparison increases and debut of puberty (Guindon, 2010a). Seidah and Bouffard (2007) proposes that the reason why SE decreased during adolescence in their sample, could be because as adolescents get older they become more self-aware and judgmental toward themselves due to their brain developing and with the increased exposure to mass media with its unrealistic ideals (p. 264).

Nevertheless, as seen in chapter 3.3.1.1, there is most evidence for that SE is stable during adolescence, with a slight increase. However, SE levels in adolescence are lower compared to in adulthood. In addition, compared to SE in adulthood, there is more variation in SE during adolescence (Erol & Orth, 2011; Kuster & Orth, 2013; Orth & Robins, 2014). This indicates, as Erol and Orth (2011) writes, that the adolescent period is an important time for SE development, and for that reason an advisable period to focus on SE (p. 613).

4.2.3 Socioeconomic status

In regards to socioeconomic status (SES) and SE, the majority of studies in chapter 3.3.1.1 found an association between SES and SE in adolescence; lower SES was associated with lower SE, and higher SES was associated with higher SE. There can be many reasons for these findings. Twenge and Campbell (2002, p. 60) write about the most used models to explain the link between SES and SE (p. 60-63). In short, one of these is "the social Indicator/salience model" which explains that because SES and status are highly related, and status and SE are linked, it is therefore believed that higher SES will result in higher SE. However, people must consider status/SES as important to find this association (Twenge & Campbell, 2002). The next model, "reflected appraisal", Twenge and Campbell (2002) write that people internalize others perceptions of themselves, and because people can be treated or viewed differently due to SES, this can then influence SE (p. 61).

Another reason can be that there are several stressors linked to low SES (McLoyd et al., 2009), and as explained before, stress can have many negative consequences. Further, to live in a family with low SES can cause situations or adaptations that adolescents do not have the coping mechanisms to handle (McLoyd et al., 2009). In addition, as adolescents grow older, they become more aware of their SES and what it means. The experience of stigma or knowing the negative social thinking of low SES may lead to negative evaluation (McLoyd et al., 2009). Adolescents also often compare themselves to peers and status becomes a trait they evaluate themselves on. As a consequence, what social class they are in can begin to matter (Wells, 2001). For example, coming from a low SES family can affect their possibility to keep up materialistic with other peers, which can affect their SE negatively (Demo, 2001). Furthermore, the different ways to measure SES make it difficult to compare studies and can be a reason for the varied results regarding SES and SE. It is also important to consider that when answering on their parents' income, education and occupation, adolescents might not always know and can give misleading answers (Aarø & Klepp, 2009). This will also apply in the association between SES and PA.

4.2.4 Stress

As was seen in chapter 3.7.1, studies have found a negative association between stress and SE in adolescence. According to Sarafino (2008), in the face of demands and stressors, people with high SE are more likely to believe they have the strengths and resources to manage it (p.65). Furthermore, stress is linked to many negative outcomes as seen in chapter 3.7.1, and these negative outcomes are also related to low SE. Additionally, adolescents with high stress levels, have more health complains, feel worse about themselves and experience less control in their life compared to those who do not feel stressed (Schraml et al., 2011) and this might impact SE negatively.

4.3 Physical activity in adolescence

In adolescence, the meaning of physical activity (PA) expands; it is still fun, but also more related to health and fitness, as well as new physical activities become more popular and sports become more serious (Burrows, 2010). PA is a common activity that adolescents engage in, both in school and in leisure time. It is an important aspect of their life. PA can have positive impact on health in adolescents in many ways, such as on physical health through preventing diseases and strengthening overall body function (WHO, 2017b), as well as acting as a buffer against the negative effects of chronic stress

(Clow & Edmunds, 2014). It can also be positive for well-being and mental health in adolescence, where research has found that it can reduce depression (Biddle & Asare, 2011; Eime et al., 2013; Lubans et al., 2016), anxiety (Biddle & Asare, 2011), have positive effect on quality of life, general self-efficacy, body image (Lubans et al., 2016), social skills, higher self-confidence, self-knowledge, emotional regulation, less suicidality (Eime et al., 2013) and on cognitive function; such as improved cognitive performance, academic achievement and classroom behavior² (Biddle & Asare, 2011). In adolescence, PA is also a common arena to be with friends, or to gain new friends (WHO, 2017b).

As previously mentioned, the perspective on adolescence has shifted from being recognized as a period of “storm and stress” to Positive Youth Development (PYD). PA is relevant in this regard for several reasons. Firstly, many adolescents chose to engage in PA (Bakken, 2016), which is good both for their physical-, mental- and social health. A report in Norway also found that adolescents are now generally doing well, are active and well-adapted (Bakken, 2016). This is in line with PYD: adolescents can develop positively and are mature. Secondly, studies have found (see e.g. Eime et al. (2013)) participation in sport to be positively associated with PYD-questioners. Moreover, compared to other extracurricular activities or not participating in sport, sport as an extracurricular activity had greater developmental benefits for adolescents. Adolescents can learn and develop in many ways through PA, as well as establish habits that can follow into adulthood (Bauman et al., 2012). Furthermore, many of the effects that PA can have are seen as protective factors important in a healthy development and for mental well-being, such as social network, support and company of caring adults (Eime et al., 2013). These findings support the perspective PYD: adolescents can develop positively, and PA is a good way to strengthen their healthy and positive development.

Although, as mentioned in chapter 3.4.1.1, there can be some negative sides to PA. However, it is important to state that for most people, PA is positive, and the negative sides are in minority, but they are important to know about, so that people working with PA amongst adolescents can recognize it and help (Cook & Hausenblas, 2014; Fox, 2003; Raglin et al., 2014).

4.3.1 Gender, age and SES

Many studies have found that girls are less physical active than boys, as mentioned in chapter 3.4.1.2. Slater and Tiggemann (2011) proposed that these gender differences might be due to girls experiencing more teasing for skills, weight and appearance in PA settings, and this type of teasing is associated with negative body image outcomes, and as a consequence they quit PA (p. 461). Another reason can be as Schmalz et al. (2007) suggest, that as adolescents get older and become more aware of gender ideas/social expectations, girls might quit typical masculine physical activities (p. 563).

Furthermore, as seen in chapter 3.4.1.2, there are also gender differences within types of PA. How PA is measured might therefore influence results on how physically active boys and girls are (Dumith et al., 2011; Seippel et al., 2011). For example, as previously mentioned, girls are more active on their own. If one only measures organized activities, then girls’ activity levels might not be fully captured and results might then show that girls are less active. Indeed, reports in Norway that have measured a wide range of physical activities show that girls and boys are in total around equally active,

² These effects on cognitive function are however often small and results are inconsistent.

they are just active in different ways (Bakken, 2016; Seippel et al., 2011). Therefore, to measure a varied range of PA is important to give a correct representation of adolescents' PA.

The majority of reports and studies in chapter 3.4.1.2 found that PA decreases during adolescence. There are several possible reasons for this. For instance, as adolescents get older they spend more time on homework, job employment, chores at home, have more various activities to choose between and spend more time with friends (Joseph L Mahoney et al., 2009). Additionally, some adolescents quit sport because it tends to get more serious as they get older, with higher demands (Joseph L Mahoney et al., 2009; Seippel et al., 2011). For instance, not enough time, other priorities and high pressure in sport were reasons why adolescents quit PA in the qualitative study of Bélanger et al. (2011). In fitness studios, however, there is not any competition and ranking in the same way compared to sports, and everyone can exercise there despite their skills and experience. Fitness studios can therefore be a good alternative to sports (Seippel et al., 2011). Thus, this may be the reason why this activity increases during high school.

Although varying results, the majority of studies presented in chapter 3.4.1.2 found that low SES was associated with lower PA levels in adolescence. There can be several reasons for this. Firstly, adolescents living in low SES neighborhoods can have parents who view the area as less safe and therefore have rules on when they can be outside. These neighborhoods can also have fewer available areas for leisure activities (Hamer, 2014; Stalsberg & Pedersen, 2010) or less activities to offer (Joseph L Mahoney et al., 2009). Secondly, some physical activities can be expensive, which can affect who can afford to participate or not. For example, some sports can be expensive due to the requirement for equipment, club membership, training fees, clothing, license/insurance and transport expenses (Bakken, 2016; Hamer, 2014; Seippel et al., 2011; Stalsberg & Pedersen, 2010). Thirdly, measuring education level can be an indicator of knowledge level, for example on PA's positive health benefits, which those with low education might not be fully aware of. Lastly, adolescents from low SES families may need to work part-time to provide economic to the household and therefore may not have time for PA (Stalsberg & Pedersen, 2010). Despite the different ways in measuring SES, according to Hamer (2014), the associations will mostly be the same (p. 69).

4.3.2 Measuring physical activity

One of the reasons as to why there can be varying results in studies of PA and in studies investigating PA's association with self-esteem (SE), may be due to the different methods and instruments used to measure PA. Firstly, there are various ways to measure PA: direct observation, indirect objective measures (e.g. heart-rate), different self-reports (e.g. paper or internet questionnaires, activity diaries, interviews) and pedometers (Taylor, 2014). The most common are self-report methods (Dumith et al., 2011) and accelerometry. There are also different instruments and questionnaires that can be used in these two methods (Ekelund et al., 2011). Furthermore, PA is a wide theme, and can be measured by intensity, frequency, duration, type of activity and so forth. Secondly, there are limitations to both of these methods. Self-reporting is simple and cost-effective, though can be influenced by bias by the respondents, who can either over- or underestimate their activity level or do not remember it accurately (Ekelund et al., 2011), with overestimating most common according to Ekelund et al. (2011, p. 860) and Hallal et al. (2012, p. 254). Accelerometry on the other hand, can give more accurate and objective measurements of PA (Ekelund et al., 2011; Hallal et al., 2012). Although,

since there is no agreement on intensity cut points, the results vary in studies and are difficult to compare (Ekelund et al., 2011). Thirdly, Ekelund et al. (2011) also writes that these limitations gets heighten or are specific to adolescents (p. 859). Adolescents also have different PA patterns than adults, for example they are often more periodic (Ekelund et al., 2011). Lastly, PA can be understood differently by people, which can deviate by gender, age, culture, region and country (Hallal et al., 2012). In sum, it is therefore difficult to compare studies and the results may vary because studies measure different aspects of PA and use different methods (Booth et al., 2015; Dumith et al., 2011; Ekelund et al., 2011).

Furthermore, as was seen in chapter 3.4.1, several studies have also found that adolescents do not reach the recommended level of PA. This may in fact be even lower due to the previously mentioned overestimating in self-report instruments. These findings, together with PA levels declining during adolescence (Bakken, 2016; Dumith et al., 2011), are concerning due to PA's wide range of positive health benefits. The decrease in everyday activity is also concerning, as everyday activity has positive health outcomes (Hallal et al., 2012). Based on this, it is of great public health relevance to focus on PA in adolescence. Indeed, PA in adolescence is associated with PA in adulthood (Bauman et al., 2012), such that forming positive PA habits during the adolescent period may help to facilitate a healthy lifestyle throughout life.

4.4 The association between physical activity and self-esteem in adolescents

Many studies (Biddle & Asare, 2011; Eime et al., 2013; Ekland et al., 2005; Liu et al., 2015; Lubans et al., 2016; Schmalz et al., 2007) have found a significant positive association between physical activity (PA) and the outcome self-esteem (SE) in adolescents. As mentioned in chapter 4.1, there are many ways that PA can influence SE in adolescents, ranging from biological-, psychological- and social effects. Furthermore, different types of activities or exercise settings that adolescents engage in may impact SE differently. For instance, engaging in organized activities, such as team sports, can give more social feedback from peers and coaches, compared to PA alone (Lindwall & Aşçi, 2014). This is also in line with the review of Eime et al. (2013) that found that organized and/or team sports had a stronger effect on SE compared to individual sport, and the review and meta study by Liu et al. (2015) who found that school- and gymnasium PA had larger effects on SE compared to other settings. On the other hand, there might also be a negative influence from some types of activities. Slater and Tiggemann (2011) found that certain types of PA, especially aesthetic activities, were associated with disordered eating symptomatology, body shame and appearance anxiety in adolescents. Hence, the context and type of activity may influence SE differently.

The findings of Eime et al. (2013) and Liu et al. (2015) mentioned above, indicate that there are certain factors in being physically active with others that can give more benefits for adolescents' SE. Eime et al. (2013) also found that sports was associated with several positive social outcomes, such as social skills, positive relationship with coaches and friends, making new friends, teamwork and cooperation etc. The social aspect is recognized as a mechanism in the PA and SE relationship. It is, for example, included in the biopsychosocial feedback model by Lindwall (2004). PA with others gives the aspects of belongingness, being part of something, building friendships, positive relationships with peers and coaches and feedbacks from these which can influence their SE (Fox, 2003; Lindwall & Aşçi, 2014). Furthermore, social belonging is a need humans

have, which is another reason why the social aspect of PA can influence SE (Fox, 2003). In addition, as mentioned in chapter 3.2 and 3.3.1, for adolescents, peers are a large and important part of their lives, as well as that peer relationships is a factor that influence their SE. So exercising together, or belong to a team, can influence adolescents positively.

The findings that exercising together has additionally benefits for SE are of relevance in Norway, because as was seen in chapter 3.4.1.2, Norwegian adolescents quit team sports during adolescence and either start being active alone or stop exercising altogether. One of the reasons for this is because sports tend to get too serious and competitive in adolescence (Eime et al., 2013; Seippel et al., 2011). Because of the additional benefits for SE by being physically active with others, it is advisable to have options for all adolescents; those who want to participate just for fun, and for those who want to pursue sport. On the other hand, regarding the social aspect of PA and its effect on SE, the review by Lubans et al. (2016) had some opposite findings. In three of four of the studies investigating social acceptance or social competence as a potential mechanism of PA on the outcome SE, social acceptance/competence did not significantly increase during PA interventions, but SE still improved. Lubans et al. (2016) proposed that this can be because adolescents can have many friends, but at the same time in an exercise- or sport setting can view themselves as incompetent and physically unattractive, and therefore, in such settings, it will be difficult to improve feelings of social acceptance (p. 9). This can also be because sport can be competitive and cause negative peer interaction (Eime et al., 2013). This emphasizes the importance of adolescents engaging in an activity that they like and enjoy, whether it is with others or alone, and that teachers or coaches creates an environment that is safe; adolescents should not compare themselves to others, but rather promote values such as progress, mastery, enjoyment and learning (Lindwall & Aşçi, 2014).

4.4.1 Self-acceptance, social comparison and body image

In light of SE theory, self-acceptance is believed to be a main component (Sonstroem & Morgan, 1989). The social aspect of PA can be something that can contribute to this, for example by feedback, support and encouragement by coaches or peers. In this regard, as Sonstroem and Morgan (1989) writes, it is important that the feedback teaches adolescents that they have value even though they do not succeed in a sport etc. (p.330). Everyone has strengths and weaknesses; one cannot succeed or be good at everything. Indeed, regarding Norwegian adolescents, where recent reports show that adolescents feel stressed and wants to be good and succeed in many aspects in their life (Bakken, 2016; Sletten & Bakken, 2016), feedback and support that contributes to self-acceptance is highly important. Furthermore, this is especially important in adolescence for other reasons. Firstly, adolescents commonly compare themselves to others (Demo, 2001; Richman et al., 2010), and PA/sports is an arena they commonly compare themselves to peers, and if they perceive themselves as less skilled than their peers, they avoid engaging in- or quit PA (Bélanger et al., 2011). Secondly, in light of SE theory, social comparison is a factor contributing to SE (Demo, 2001; Wells, 2001). Therefore, that adolescents learn to focus on their own physical progress and development in PA, the value of being physically healthy, having a body that masters daily chores etc. is important, rather than that they compare themselves with whom lifts the heaviest weights or has the thinnest body/most muscles (Lindwall & Aşçi, 2014; Sonstroem & Morgan, 1989).

Body image is also here of relevance, as it is strongly connected to both SE and PA, and is included in both the PSPP model and the EXSEM model. As mentioned in chapter 3.5.1, it is believed that PA leads to improvements in body image, which then leads to improvements in SE. PA is one of the most used tools to gain the "ideal" body (Lindwall & Aşçi, 2014), with many adolescents exercising to gain or maintain a certain body (Bélanger et al., 2011; Kahn et al., 2008). In addition, Lindwall and Aşçi (2014) writes that body attractiveness has the strongest association with both physical self-esteem (PSE) and global self-esteem (GSE) (p.87). In adolescence, according to Smith (2010), the major and strongest predictor to SE in adolescence is physical appearance and attractiveness (p. 125). One study also found that for some adolescents, it could determine their SE (Seidah & Bouffard, 2007). On the one hand, improving one's body can be positive for one's SE because it can give an individual positive feedback from others, as well as positive feedback from oneself because one has worked hard and gained/fulfilled what is perceived as the "normal/ideal" body in that culture (Lindwall & Aşçi, 2014). On the other hand, a focus on the body can be negative and many adolescents experience body pressure (Bakken, 2018). Many adolescents are also self-conscious about their body, due to the bodily changes that occur in this period (Smith, 2010). Furthermore, Slater and Tiggemann (2011) found that girls more frequently experience teasing on how they look in PA contexts than boys, and that this impacts them negatively, and, as a consequence, adolescent girls might quit PA (p. 461). In addition, exercising too much may lead to one being too self-aware, self-critical and with a high negative body focus, which can reduce the positive effects of PA, such as on SE (Fox, 2003). Thus, as mentioned in chapter 4.2, there is complexity in body perception, and interventions should focus on promoting a healthy body image.

4.4.2 The models

The most used models in the PA and SE relationship are the PSPP by Fox and Corbin (1989) and the EXSEM by Sonstroem and Morgan (1989) and Sonstroem et al. (1994), both building on the theory of SE as a multi-hierarchy construct. Based on these, improvement in global self-esteem (GSE) will happen when there are positive improvements in specific physical self-perceptions (appearance, sport, endurance, strength, competence and self-efficacy), leading to enhanced physical self-esteem (PSE) which then impacts GSE. In all of the studies in the review by Lubans et al. (2016) that examined mechanisms in the relationship between PA and SE in adolescents, variants of these physical self-perceptions were most common, and a causal link were found in most studies; by being physically active these physical self-perceptions increased and so did SE. The review of Eime et al. (2013) had similar findings. These empirical findings support both the PSPP and the EXSEM model. These models have also gained empirical support in other studies, and are the most used models/theories to explain why PA has an effect on SE (Lindwall & Aşçi, 2014). The advantage with these models is that they have a theoretical foundation which gives the field a theoretical grounding, as well as being well validated (Fox, 2003). Furthermore, as mentioned in chapter 4.1, a biopsychosocial perspective is also relevant in understanding the association between PA and SE. A biopsychosocial feedback model was first proposed by Lindwall (2004), and later also recommended by Lindwall and Aşçi (2014). This model brings together all the hypotheses to give a comprehensive picture of the association. Based on the theory and research presented, PA can influence SE in many different ways, either directly or indirectly by improving other constructs which then influence SE. By having knowledge about the pathways in this association, PA interventions can be used to facilitate improvements in the SE of adolescents.

4.4.3 Inconsistent results

Even though many studies have found a positive association between PA and SE in adolescents, some studies (Kahn et al., 2008; Van Dijk et al., 2016) have not, and many of the positive associations are small (Biddle & Asare, 2011; Ekeland et al., 2005; Liu et al., 2015). Of the studies included in the reviews of Liu et al. (2015) and Lubans et al. (2016), most of the studies found positive associations, but there were also many that did not. There are thus inconsistent results in this field. The small associations and inconsistent results between studies can have several possible explanations. Firstly, the duration of studies may be one reason. For instance, the longitudinal study of Van Dijk et al. (2016), that found no association between PA and SE in adolescents, suggested that an explanation for this may be because of the short one-year follow up, and that the effects PA might have on SE take time to evolve and therefore develop later (p. 6). For change to happen, for example to experience mastery and gain a perception of sport competence or endurance, might take some time, especially if one is new to the activity (Fox, 2003). It is therefore advantageous with longer follow up studies, as in long lasting studies there are more frequently SE change (Fox, 2003). Sonstroem and Morgan (1989) recommends a one to two year period in studies due to GSE being fairly stable, and therefore change takes time, as well as for the effects of exercise to develop (p. 333).

The reason for the small positive associations between PA and SE in adolescents might also be because of the distinction between global self-esteem (GSE) and specific SE. In light of SE theory, there is a difference between GSE and specific SE, and it is common to study both (Guindon, 2010b; Lindwall & Aşçi, 2014; Sonstroem et al., 1994). According to Rosenberg et al. (1995), the reason why there are often small associations between behavior variables and GSE, is because behavior variables are more related to specific SE, while GSE is more related to mental health (p. 153). In this context, PA is a behavior, and the specific SE relevant is physical self-esteem (PSE). As mentioned before, both the PSPP model, the EXSEM model and the biopsychosocial feedback model state that the effect of PA goes through PSE, and then from PSE to GSE. Van Dijk et al. (2016) suggests that this might be the reason for their non-significant result, namely that PA is stronger related to PSE than GSE (p. 6). Furthermore, the theory in these three models also state that PSE and other physical self-perceptions are more prone to change compared to GSE, which is viewed as fairly stable (Fox, 2003; Lindwall & Aşçi, 2014; Sonstroem & Morgan, 1989). This is also in line with Guindon (2002), who writes that it is easier to change specific SE, compared to GSE (p. 207). Based on research, SE is found to be fairly stable (Kuster & Orth, 2013; Orth & Robins, 2014), also in adolescence (Birkeland et al., 2012; Moksnes et al., 2016; Morin et al., 2013). However, this does not mean that GSE cannot be changed, but that it can take some time to change GSE. Also, as GSE is made up by many different specific SE (e.g. PSE), when these change, so does GSE (Guindon, 2002).

As mentioned in chapter 3.3.1, there are many different factors that contribute to SE in adolescence, such as friends, family and school. Therefore, as Fox (2003) writes, this means that SE is not only dependent on PA, there are still other factors that influence SE at the same time (p. 99). The small associations in research might therefore be because there is other equally- or more important factors contributing to SE at the same time. SE is also based on what individuals value as important (Guindon, 2010b). Therefore, in this context, if individuals do not value PA, it might not have so much influence on SE and other factors will contribute more. However, from a societal perspective, in western cultures, both PA and to maintain/gain the body ideal is highly

valued and important to individuals, increasing its effect on SE (Fox, 2003; Lindwall & Aşçi, 2014).

4.4.4 Measuring physical activity

A challenge when examining PA in general and in relation to SE is, as mentioned before, that PA is measured in various ways, from intensity, frequency, duration, different activities, PA in school, PA just in leisure time etc. Many of the studies on the relationship between PA and SE included in this paper measured PA differently. For example, all 25 RCT in the review of Liu et al. (2015) had different PA interventions, varying in style (alone, combined), intensity (min/sessions), frequency (times/week) and length (weeks) when measuring the effect on SE/SC. This makes it difficult to determine exactly what type of PA, how much PA or in what context that it influences SE the best, as well as comparing studies. Many researchers, such as Eime et al. (2013), Liu et al. (2015), Ekelund et al. (2005), Biddle and Asare (2011) and Fox (2003) address this problem in the field of studying PA's association with SE, as well as on other outcomes. Because of this, Liu et al. (2015) therefore examined this problem in their meta-analysis and found that the association between PA and SE/SC did not change considerably when accounted for the different measurements (intensity, frequency, duration, type), except the setting. Indeed, school- and gymnasium based PA interventions had a larger effect on SE/SC compared to other settings (Liu et al., 2015). Moreover, the review of Eime et al. (2013) found that team sports were more favorable than individual sports for SE, while Lindwall and Aşçi (2014) write that frequency of PA is more important for SE than intensity and duration (p. 98).

Despite the difficulty with comparing studies and gaining an exactly conclusion on how much PA, what type of PA etc. is best for SE, the following summary can be made. That many different studies with different ways of measuring PA find a positive association between PA and SE in adolescents may indicate that being PA in general is positive for SE; it may not be a "gold standard" of PA that is the best. Adolescents can achieve benefits for their SE from many forms of PA. The most important is that adolescents find an activity they like and enjoy, so that they can gain the positive effects PA can have.

5.0 Limitations and strengths

There are some limitations in this paper. Firstly, only one person did the literature search and the theme is large, making it difficult to capture everything. Only literature and studies in English or Norwegian were used. These factors contribute to the possibility that relevant literature or research is not included. Furthermore, only the term self-esteem (SE) was used in the literature search. Different terms about SE are used interchangeably, such as self-concept (SC), self-worth etc. Some articles can write self-concept in the title, but use a SE scale. Only using the term SE might have led to that articles using SE scales were not found. However, this was done as SE and SC are often considered as slightly different concepts (albeit related) (see e.g.: (Fox, 2003, p. 89; Liu et al., 2015, p. 13; Sonstroem & Morgan, 1989, p. 330)). In addition, to only use the term SE is also a strength, because it is specific on what is being studied. Lastly, studies with different methods and measurement instruments make it difficult to compare studies. Physical activity (PA) measurements also have its limitations (Ekelund et al., 2011). These factors were taken into account, and have been discussed in this paper.

Some strengths in this paper are the inclusion of reviews, which is a good way to get an overview of the field. Furthermore, in the association between PA and SE, a strength is the theoretical foundation, with the explanation of different models, hypothesis and theories that are the most used in this field and well validated. This gives a broad understanding and a solid framework on this relationship, capturing the complexity in the relationship. Moreover, this field is highly relevant for public health, where both the adolescent period, SE and PA are important focus areas.

6.0 Conclusion

Although many Norwegian adolescents are doing well, many report on experiencing stress, worrying and physical health problems, and there is an increase of depression amongst adolescent girls. Many adolescents have a high SE, either stable or slightly increasing during adolescence. However, a slight proportion of adolescents report that they have low SE. Low SE in adolescence is associated with negative health outcomes, such as mental health problems, which can also follow into adulthood. High SE is seen as a protective factor and is associated with many positive health outcomes. Furthermore, many adolescents do not fulfill the PA recommendations, and there is also a decrease in PA during adolescence, along with a change in their PA patterns. These findings emphasize the importance of strengthening adolescents SE and to focus on getting more adolescents to fulfill the PA recommendations.

Regarding the association between PA and SE, it may seem that PA can influence SE in adolescents. There are many hypothesis to how PA influence SE, either directly or through first increasing different physical self-perceptions (sport, endurance, appearance, competence etc.) and physical self-esteem (PSE), which then leads to improvements in SE, such as the models by Fox and Corbin (1989) and Sonstroem et al. (1994) propose. There may also be many other factors contributing, for example the social aspect of PA and biological mechanisms, which is why Lindwall (2004) and Lindwall and Aşçi (2014) propose a biopsychosocial view in this field. In sum, there can be many ways that PA influence SE, and it is important to facilitate so that adolescents can achieve these aspects which may improve their SE.

Studies with different assessment methods of PA have found a positive association between PA and SE in adolescents. This indicates that adolescents can achieve benefits for their SE from many forms of PA, and it is therefore advisable to promote adolescents to be physically active. The most important is that adolescents find an activity that they enjoy, so that they can achieve the positive effects of PA, both for their SE and their physical-, mental- and social health, which also improves the chance that they stay active.

Despite many studies finding a positive association between PA and SE in adolescents, the associations are often small and some studies do not find an association; hence there are inconsistent results in this field. This may be due to short follow-up studies, that the effects of PA take time to develop, that SE is fairly stable and takes time to change and that PA have a stronger association to physical self-esteem (PSE). There might also be a bidirectional relationship between PA and SE, as well as other factors influencing the results at the same time.

Because of the varied results regarding PA and SE, more research is called for. For instance, Lindwall and Aşçi (2014, pp. 98-99) call for more research, at different

populations, ages and with other factors that can influence this relationship. Orth and Robins (2014) also recommends more research on factors that contribute to SE (p. 385). This will be done in the next article in this thesis, on a population of adolescents in Norway, with a survey conducted in 2016. The article will investigate the association between PA and the outcome SE, controlled for age, gender, SES and stress.

Abbreviations:

SE= Self-esteem. GSE= Global Self-esteem. SC= Self-concept. SW= Self-worth. RSES= Rosenberg Self-esteem Scale. PSE= Physical Self-esteem. PA=Physical Activity. PSPP= Physical Self-Perception Profile. EXSEM= The Exercise and Self-Esteem Model. SES = Socioeconomic status.

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PAPER II

The role of physical activity and stress on self-esteem: A cross-sectional study among Norwegian adolescents

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Abstract

Introduction. The aims of this cross-sectional study are to investigate the association between physical activity, stress and the outcome self-esteem on a Norwegian sample of adolescents, and to investigate gender differences on these factors. **Methods.** The data used is from a cross-sectional survey conducted on a sample of Norwegian adolescents (n=1233) in public lower- and upper secondary school, age 13-19. The sample consist of n=644 boys and n=580 girls. Descriptive statistics, Pearson product-moment correlation coefficient, t-test and hierarchical multiple linear regression were used to analyze the data. **Results.** Significant gender differences were found on self-esteem and stress. Boys scored higher on self-esteem than girls, whereas girls scored higher on stress than boys. No gender difference was found on physical activity. Results from the hierarchical multiple regression analysis shows stress having a significant negative association with self-esteem (controlled for age, gender and socioeconomic status), and physical activity having a significant positive association with self-esteem, when controlled for age, gender, socioeconomic status and stress. **Conclusion.** The findings support the significant unique positive role of physical activity in promotion of adolescents' self-esteem. Strategies aimed at stress reduction and coping are encouraged to better adolescents' self-esteem.

Keywords: Adolescents, self-esteem, physical activity, stress, gender differences.

Introduction

The adolescent period is characterized by many transitions, as well as rapid and large developments biologically, socially, physically, cognitively, emotionally and psychologically (Compas & Reeslund, 2009; Sawyer et al., 2012). Habits that are made during this period often follow into adulthood (Ozer & Irwin, 2009; Sawyer et al., 2012; Viner et al., 2012). According to Folkehelseinstituttet (2015), among children and adolescents in Norway, around 15-20 % have mental health symptoms, while around 8 % have mental health disorders. This has many negative consequences, both for the

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individual (Samdal et al., 2016) and the society (Helsedirektoratet, 2016; Major et al., 2011). It is therefore a great need to prevent this, and to promote a good mental health.

Self-esteem (SE) is an important factor for good mental health, as well as other health outcomes. Positive outcomes in relationships, health and work life are found to be associated with high SE (Orth & Robins, 2014), while a low SE is found to be related to depression and anxiety (Sowislo, Orth, & Hinshaw, 2013). SE is defined as " a positive or negative attitude toward a particular object, namely, the self" (Rosenberg, 1965, p. 30). A high SE is characterized by self-acceptance, self-worth, self-respect; the person feels "good enough" (Rosenberg, 1965). In adolescence, low SE is found to be related to depression, anxiety (Bos, Huijding, Muris, Vogel, & Biesheuvel, 2010; Moksnes, Bradley Eilertsen, & Lazarewicz, 2016; Moksnes & Espnes, 2012), eating problems, disrupting behavior (Bos et al., 2010), while a high SE is associated with increased social support (Marshall, Parker, Ciarrochi, & Heaven, 2014). Moreover, previous studies have found that boys have a higher SE than girls in adolescence (Bachman, O'Malley, Freedman-Doan, Trzesniewski, & Donnellan, 2011; Helsedirektoratet, 2016; Moksnes et al., 2016; Schraml, Perski, Grossi, & Simonsson-Sarnecki, 2011).

Adolescents' SE level can also be important for later life, as found in the longitudinal study by Birkeland, Melkevik, Holsen, and Wold (2012), adolescents with high SE have less somatic complaints, higher life satisfaction, better sleep and lower symptoms of depression at age 30, compared to adolescents who have low SE during adolescence. Boden, Fergusson, and Horwood (2008) also found that SE in adolescence was associated with later life outcomes, although the associations were weak. Hence, SE development in adolescence is important, and to investigate what factors that influence SE in adolescence is therefore highly relevant.

Physical activity (PA) is an important aspect of adolescents' daily life. It is widely recognized as important for their physical health, both during adolescence, and in later life (WHO, 2017), as PA habits in adolescence often follow into adulthood (Bauman et al., 2012). In PA, adolescents can be with- or make new friends, learn skills and teamwork and experience mastery (WHO, 2017; Wold, 2009). In Norway, a report by Helsedirektoratet (2016) states that around 58 % of boys and 43 % of girls aged 15 achieve the recommended amounts of PA (p. 26). Worldwide, according to Hallal et al. (2012), 80.3 % of adolescents are not active enough in regards to the recommended amount (p. 247 and 250). Physical inactivity is a major public health challenge, where Kohl 3rd et al. (2012) writes that "physical inactivity is the fourth leading cause of death worldwide" (p. 294).

Adolescents' PA patterns change in many ways during adolescence. Previous studies have found that PA decreases during this period (Bakken, 2016; Dumith, Gigante, Domingues, & Kohl III, 2011; Seippel, Strandbu, & Sletten, 2011; Van Dijk, Savelberg, Verboon, Kirschner, & De Groot, 2016). In early adolescence, participation in organized sports is most popular, but this decreases during adolescence, and going to the gym becomes more popular in late adolescence (Bakken, 2016; Seippel et al., 2011). There are inconsistent findings regarding gender differences in PA, where some studies have found that girls are less physical active than boys (Hallal et al., 2012; Slater & Tiggemann, 2011; Stalsberg & Pedersen, 2010), while some studies have found no difference between boys and girls in PA (Bakken, 2016; Schraml et al., 2011; Seippel et al., 2011). Reports from Norway, however, have found gender differences in PA preferences: boys participate more in sports, while being physical active alone or

participating in gymnastics, dance, etc., is more common for girls (Bakken, 2016; Seippel et al., 2011).

Previous studies have found a positive association between PA and SE in adolescents (Eime, Young, Harvey, Charity, & Payne, 2013; Liu, Wu, & Ming, 2015; Lubans et al., 2016; Moksnes, Moljord, Espnes, & Byrne, 2010). For instance, Biddle and Asare (2011) found that in children and adolescents, PA can improve SE. Furthermore, the review of Ekeland, Heian, and Hagen (2005) found that PA can increase SE, with approximately 10 % difference in SE for children and adolescents that had a PA intervention, compared to control groups. There can be many reasons for this association, ranging from social factors (belongingness, support), more positive body image, the experience of mastery, gaining a competence in an activity and improvements in one's physical health, to mention a few (Fox, 2003; Lindwall & Aşçi, 2014). Some of these hypotheses are incorporated in models, and some of the most used models in this field are the "Physical Self-Perception Profile" (PSP) (Fox & Corbin, 1989) and "The Exercise and Self-Esteem Model" (EXSEM) (Sonstroem & Morgan, 1989) (expanded later by Sonstroem, Harlow, and Josephs (1994)); see the respective sources or Lindwall and Aşçi (2014, pp. 86, 94-95) for more details on these models. PA also affects human biology in different ways (Clow & Edmunds, 2014; Lubans et al., 2016), and according to Clow and Edmunds (2014), many researchers believe that it is especially the effects PA have on the brain that are the main reasons for PA's influence on mental health and well-being (p. 11).

Although some studies find an association between PA and SE in adolescence, many of the associations are weak (Biddle & Asare, 2011; Ekeland et al., 2005; Liu et al., 2015) and some studies have not found an association between PA and SE in adolescence (Kahn et al., 2008; Van Dijk et al., 2016). In the review of Lubans et al. (2016), five of eleven studies found no association between PA and SE in adolescence. Due to this, more research is called for, at different populations and ages (Ekeland et al., 2005; Lindwall & Aşçi, 2014). Furthermore, society changes, new norms emerges, and the context adolescents grow up in can differ from previous generations (Sawyer et al., 2012). More adolescents now exercise five times or more per week, and being healthy and "fit" has become more popular in recent years (Bakken, 2016; Seippel et al., 2011). Thereby new and updated research is needed.

Even though many Norwegian adolescents are doing well (Bakken, 2016), there are many adolescents who experience stress. Bakken (2016) found that of adolescents in upper secondary school in Norway, 40 % reported they felt very stressed. A study by Schraml et al. (2011), conducted on adolescents in Sweden, had similar findings. Previous studies have found that in adolescence, girls experience more stress than boys (Byrne, Davenport, & Mazanov, 2007; Moksnes et al., 2016; Schraml et al., 2011) and that stress increases during adolescence (Byrne et al., 2007; Moksnes et al., 2016). Stress can be defined as "the circumstance in which transactions lead a person to perceive a discrepancy between the physical or psychological demands of a situation and the resources of his or her biological, psychological or social system" (Sarafino, 2008, p. 63). Some exposure to stress can be normal; too much, however, can be negative (Sarafino, 2008). In adolescence, higher stress is found to be associated with higher levels of depression and anxiety, lower SE (Byrne et al., 2007; Moksnes et al., 2016; Moksnes, Espnes, & Haugan, 2014; Schraml et al., 2011), as well as with less sleep (Schraml et al., 2011).

In sum, self-esteem, stress and physical activity can have an impact on adolescents' health and life, both in the short term and the long term, and to further investigate this in a sample of Norwegian adolescence can therefore be highly relevant for public health work.

The aims of this article are therefore to investigate:

- (1) gender differences on self-esteem, stress and physical activity; and
- (2) the association between physical activity, stress and the outcome self-esteem, controlled for gender, age and socioeconomic status.

Method

Participants

This article has a cross-sectional design, using data from the survey "Oppvekst i Bygder", which was conducted in five rural municipalities in the southern part of the county Trøndelag in Norway. The survey has been conducted every fifth year since 1996, and the data used in the present study was collected in 2016. Five lower and three upper secondary schools participated. In the survey, adolescents are asked about their experiences on various areas in their daily life, such as their health, health-risk behaviors, happiness and mental wellbeing, coping, physical activity, leisure time activities and their perception of the community and school. A total of 1906 students were invited to participate in the survey, where N=1282 students responded, resulting in a response range of 67.3 %. The reasons for the non-responders are mainly due to students not being at school when the survey was conducted, or due to students who declined to participate in the survey. For students who did not participate in the survey no detailed information is available.

Participants under the age 13 and over 19 years were excluded in order to have a sample of a common age group of adolescents in lower- and upper secondary school in Norway. This resulted in a sample of n = 1233 (49 excluded) in the age 13-19 being included in the analyses. The sample consists of 644 (52.2 %) boys and 580 (47.0 %) girls, and information about gender for 9 (0.7 %) respondents is missing. The mean age of the total sample was 15.62 (SD = 1.61), and the mean age for boys was 15.68 (SD = 1.60) and 15.55 (SD = 1.61) for girls. For more detailed information of the sample, see Table 1 in the result section.

Procedure

The project "Oppvekst i Bygder" and its data collection in 2016 was approved by the Regional Committees for Medical and Health Research Ethics, (REK) (Approval number 2016/1165). Prior to the data collection, schools, students and parents received a letter informing about the purpose of the study, practical implementation, that the study was voluntary and anonymous, that the participants could withdraw from the study and that the data would be kept confidential. In line with research ethical guidelines, a written consent from the parents was collected for participants under the age of 16. For participants older than 16, consent was given by answering the survey. The survey was conducted during autumn 2016. The practical implementation of the survey was organized by the individual schools and teachers. The students were given the

questionnaire in whole class groups, and answered it individually during a school hour of 45 minutes.

Measures

Self-esteem (SE) was measured by the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965), which is a measure of global self-esteem: a “global feeling of self-worth and acceptance, estimating positive or negative feelings about the self” (Guindon, 2010, p. 15). The scale consists of ten items, where higher scores indicate higher self-esteem. Each item has a four-point Likert-scale, ranging from (1) *strongly disagree*, (2) *disagree*, (3) *agree* and (4) *strongly agree*. Examples on items are: “I feel I have several good qualities” and “I have a positive attitude towards myself”. The RSES is the most commonly used scale to measure self-esteem (Guindon, 2010; Liu et al., 2015) and it is found to be a reliable and valid measure, suitable for many ages, including adolescents (Guindon, 2002, 2010). The scale has previously been used on Norwegian adolescents, as well as international studies on adolescents, with a Cronbach’s alpha ranging from 0.85 (Bos et al., 2010), 0.88 (Moksnes et al., 2016) and 0.90 (Schraml et al., 2011). In the present study the Cronbach’s alpha for the scale was 0.90.

Physical activity (PA) was measured by the question “Over the past four weeks, how often did you participate in sports or physical activity hard enough that you breathed fast, sweated or your heart beat fast for 20 minutes?” The item has five answering options: (1) *never*, (2) *rarely*, (3) *about one day a week*, (4) *two to three days a week* and (5) *four to seven days a week*. Self-reported PA with one single-item has previously been used on adolescents (Haugland, Wold, & Torsheim, 2003; Moksnes et al., 2010; Schraml et al., 2011). Moreover, self-report is also a common way to measure PA (Taylor, 2014), and is used in several studies on adolescents (V. M. Booth, Rowlands, & Dollman, 2015; Kahn et al., 2008; Schmalz, Deane, Birch, & Davison, 2007). Furthermore, self-reported PA among adolescents have also been tested and compared with aerobic fitness, and found to be reliable and valid (M. L. Booth, Okely, Chey, & Bauman, 2001).

Stress was measured by the thirty-item version of the Norwegian version (ASQ-N) of the original Australian version of the Adolescent Stress Questionnaire (ASQ). The original ASQ contains 56 items, measuring adolescents’ exposure to a broad range of stressors they can experience in their life. Adolescents can report to what extent these stressors have caused a psychological challenge for them (Byrne et al., 2007). Moksnes and Espnes (2011) have found that the thirty-item version of the ASQ-N represent good internal consistency and construct validity. The thirty-item scale represents seven stress areas: peer pressure, romantic relationships, home life, teacher/adult interactions, school attendance, school performance and school/leisure conflict. Each item has a five-point Likert scale, ranging from (1) *not stressful or is irrelevant to me*, to (5) *very stressful*. Higher score indicates a higher stress level. In the present study the scale is used as a total measure of stress, and the Cronbach’s alpha was 0.94.

Demographics include questions about *gender*, *age* and *socioeconomic status* (SES). SES was measured by two items: parents’ level of education and adolescents’ perception of their family economy during the last two years. Parents’ level of education was measured with the item “What is your parents’/guardians’ highest completed education?”. The item was scored separately for mother and father, and adolescents were asked to answer on both. The response option ranged from (1) *primary and lower secondary school*, (2) *upper secondary school*, (3) *college/university, up to four years*,

(4) *college/university, more than four years* and (5) *do not know*. The education level of the mothers and fathers were combined into one item, a sum score, measuring the parents' level of education. Higher scores indicate higher level of education. Next, adolescents' perception of their family economy was measured by the item "How has the family's economy been during the last two years?" with response options ranging from (1) *We have had a bad economy all the time* to (5) *We have had a good economy all the time*. Higher score indicate better family economy.

Statistical analyses

All statistical analyses were done using *IBM SPSS Statistics, version 25* for Windows. Descriptive analyses include frequencies, percentage, mean and standard deviation for the included variables. An Independent Samples T-test was conducted to investigate possible gender differences on SE, stress and PA. Pearson product-moment correlation coefficient was used to investigate bivariate correlations between age, SES, stress, PA and SE. Regarding the item *Parents' level of education*, the response option (5) *do not know*, was removed in the bivariate and multivariate analyses due to the assumption of including continuous variables, which need to have a ranking, a continuum. *Self-esteem* and *Stress* were constructed as scale sum scores. All the original items were included in the scales. Cronbach's alpha was measured for the *Self-esteem* scale and *Stress* scale to test the internal consistency. The number of missing varied between the different items and scales, with the active sample size ranging from n=663 to n=1233. Cases were excluded pairwise where it is an option in order to include as many respondents as possible. All variables were checked for multicollinearity, and all bivariate correlations were below the cut-off of 0.7 (Johannessen, 2009, p. 158; Pallant, 2007, p. 155). In addition, the independent variables in the regression analysis had Tolerance values ranging between 0.89-0.94, which is well above the cut-off of 0.10 (Pallant, 2007, pp. 155-156).

A hierarchical multiple linear regression analysis was used to investigate the association between the independent variables gender, age, SES (measured by parents' level of education and family economy), stress and physical activity on the dependent variable self-esteem. The independent variables were included in three steps in the regression model: (1) gender, age, parents' level of education, family economy; (2) stress; (3) physical activity. Gender, age, parents' level of education and family economy were entered in step 1 in order to control for these sociodemographic variables. Stress and physical activity were entered in separate steps in order to investigate the unique variance of each of these variables. Physical activity was entered last due to this being the main variable of interest. Statistical significance was set to p-values < 0.05.

Results

Descriptive statistics

Descriptive statistics of age, gender and SES are presented in Table 1.

Table 1. Demographic characteristics of the sample.

Variables	Total N (%) =	
Gender		
Boys	644 (52.2 %)	
Girls	580 (47.0 %)	
Missing	9 (0.7 %)	
Age		
13 years	147 (11.9 %)	
14 years	234 (19.0 %)	
15 years	137 (11.1 %)	
16 years	316 (25.6 %)	
17 years	250 (20.3 %)	
18 years	125 (10.1%)	
19 years	24 (1.9 %)	
Family economy		
We have had a bad economy all the time	113 (9.2 %)	
We have mostly had a bad economy	243 (19.7 %)	
We have had neither a bad nor a good economy	264 (21.4 %)	
We have mostly had a good economy	327 (26.5 %)	
We have had a good economy all the time	254 (20.6 %)	
Missing	32 (2.6 %)	
Parents level of education	Mother	Father
Primary and lower secondary school	37 (3.0 %)	69 (5.6 %)
Upper secondary school	283 (23.0 %)	366 (29.7 %)
College/university, up to four years	303 (24.6 %)	197 (16.0 %)
College/university, more than four years	221 (17.9 %)	161 (13.1 %)
Do not know	365 (29.6 %)	393 (31.9 %)
Missing	24 (1.9 %)	47 (3.8 %)

Notes: Total sample: 1233 (100%)

Gender differences in self-esteem, physical activity and stress

The means and standard deviations of self-esteem (SE), physical activity (PA) and stress for the total sample and for boys and girls are presented in Table 2. The results from the independent samples t-test found significant gender differences for SE and stress; boys scored significantly higher on SE and girls scored significantly higher on stress. There was no significant gender difference in regards to PA.

Table 2. Gender differences in self-esteem, physical activity and stress.

	Mean (SD) Total sample	Mean (SD) Girls	Mean (SD) Boys	Range	T-value
Physical activity	3.84 (1.15)	3.78 (1.10)	3.90 (1.20)	1-5	-1.878
Self-esteem	29.41 (5.84)	27.78 (5.83)	31.11 (5.36)	10-40	-7.743***
Stress	57.73 (20.81)	62.08 (21.12)	52.84 (19.15)	30-150	5.865***

Notes: ***p<0.001.

Correlation analysis

The bivariate correlations between age, socioeconomic status (SES) (parents' level of education and family economy), stress, PA and SE which were analyzed using Pearson product-moment correlation coefficient are presented in Table 3.

There was a significant weak negative correlation between age and family economy, as well as between age and SE. Age and stress were significantly weakly positively correlated, while age had a non-significant correlations with both parents' level of education and PA. Parents' level of education shared a significant weak negative correlation with both family economy and stress, while it was significantly moderately positively correlated with PA, as well as significantly weakly positively correlated with SE. Family economy shared a significant negative but weak correlation with stress and PA, and a significant weak to moderate positive correlation with SE. The correlation between stress and PA was non-significant. There was a significant moderate to strong negative correlation between stress and SE. The correlation between PA and SE was significantly weak and positive.

Table 3. Correlations between age, parents level of education, family economy, stress, physical activity and self-esteem.

	PLE	FE	Stress	PA	SE
Age	-0.029	-0.205**	0.165**	0.029	-0.094*
PLE	-	-0.092*	-0.099*	0.307**	0.137**
FE		-	-0.087*	-0.081**	0.260**
Stress			-	-0.052	-0.385**
PA				-	0.159**

Notes: * significant at the 0.05 level. ** significant at the 0.01 level. PLE: parents' level of education. FE: family economy. PA: Physical activity. SE: Self-esteem.

Hierarchical multiple linear regression analyses for variables associated with self-esteem

Table 4 shows the results from the hierarchical multiple linear regression analyses, investigating the association between gender, age, parents' level of education, family economy, stress, physical activity (PA) and the dependent variable self-esteem (SE). In step 1, gender, age, parents' level of education and family economy were entered, and these variables explained 18 % of the variance in SE. All variables except age were significant positively associated with SE. In step 2, stress was added to the model. Stress made a significant contribution to the model, and model 2, which includes gender, age, parents' level of education, family economy and stress explained 26 % of the variance in SE. In step 3, PA was added to the model. PA made a significant contribution to the model. This final model, which includes gender, age, parents' level of education, family economy, stress and PA explained 27 % of the variance in SE.

The results from step 3, which is the final model that includes all the variables, found that gender had a significant positive association with SE ($\beta = 0.23$), showing that boys have higher SE than girls. Age had a non-significant association with SE ($\beta = -0.00$), indicating that SE is relatively stable during adolescence. The association between parents' level of education and SE became non-significant ($\beta = 0.09$) in this step when controlling for PA. Family economy showed a significant positive association with SE ($\beta = 0.27$). Stress had a significant negative association with SE ($\beta = -0.30$) when controlling

for all other variables. PA showed a significant positive association with SE ($\beta = 0.13$) when controlling for all other variables. Of these variables, stress ($\beta = -0.30$) was most strongly related to SE, followed by family economy ($\beta = 0.27$), gender ($\beta = 0.23$) and PA ($\beta = 0.13$).

Table 4. Summary of the hierarchical regression analysis for variables associated with self-esteem.

		Self-esteem				
Step		B	SE B	β	F	Adjusted R ²
1	Constant	22.58	3.10		22.37***	0.18
	Gender	3.52	0.53	0.30***		
	Age	-0.16	0.17	-0.04		
	PLE	0.58	0.17	0.15***		
	FE	1.31	0.22	0.28***		
2	Constant	26.16	3.00		28.46***	0.26
	Gender	2.71	0.52	0.23***		
	Age	0.01	0.16	0.00		
	PLE	0.48	0.17	0.13**		
	FE	1.20	0.21	0.26***		
	Stress	-0.08	0.01	-0.30***		
3	Constant	24.60	3.02		25.43***	0.27
	Gender	2.65	0.52	0.23***		
	Age	-0.01	0.16	-0.00		
	PLE	0.33	0.17	0.09		
	FE	1.23	0.20	0.27***		
	Stress	-0.08	0.01	-0.30***		
	PA	0.64	0.23	0.13**		

Notes: Significant: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$. Gender: value 0, girls; value 1, boys. PLE: parents' level of education. FE: family economy. PA: Physical activity.

Discussion

This study investigated gender differences in self-esteem (SE), stress and physical activity (PA) and the association between PA, stress and the outcome SE in a sample of Norwegian adolescents, age 13-19 years. The first aim was to investigate gender differences in SE, stress and PA. Results found that boys scored higher on SE than girls and girls scored higher on stress than boys, while there were no gender differences in relation to PA.

Gender and SE. The finding that boys score higher on SE than girls is consistent with other studies (Bachman et al., 2011; Boden et al., 2008; Helsedirektoratet, 2016; Moksnes et al., 2016; Schraml et al., 2011). The explanation for this finding may be a result of gender expectations (Statham & Rhoades, 2001), differences in socialization due to gender, or due to different values effecting their self-evaluation (e.g. athletic performances or body image) and/or these being weighted differently (Demo, 2001). The gender difference may also be due to perception of physical appearance, which is a strong predictor of adolescents' SE (Seidah & Bouffard, 2007; Smith, 2010), where boys have a tendency to have a more positive perception of their body (Côtè, 2009), while girls can have a more varying and negative perception (Côtè, 2009; Smith, 2010).

Gender and stress. The finding that girls score higher on stress than boys is also supported by previous studies (Byrne et al., 2007; Moksnes et al., 2016; Schraml et al., 2011). There are several possible explanations for this. For instance, previous studies have found that girls report that they experience higher demands (Schraml et al., 2011), pressure and worry more (Bakken, 2018). Furthermore, even though both girls and boys can experience stress, such as in relation to school, girls tend to report it as higher, in addition to reporting more sources to stress compared to boys (Eriksen, Sletten, Bakken, & Von Soest, 2017, pp. 76-79).

Although this article found gender differences in regards to stress and SE, the results might be influenced by differences in self-reporting, where girls may be more willingly to evaluate and report on stress and sensitive problems (Moksnes & Espnes, 2012; Sarafino, 2008). Moreover, while the study cannot conclude on the reasons behind the gender differences found in SE and stress, the previously mentioned theory might, however, provide some explanation for it.

Gender and PA. No gender difference was found for PA in this study. This finding is in line with some studies (Bakken, 2016; Schraml et al., 2011; Seippel et al., 2011), whereas others have found that girls are less physical active than boys (Slater & Tiggemann, 2011; Stalsberg & Pedersen, 2010). The reason for the finding in the present paper may be due to how PA is measured, as the PA item used assess frequency of PA and is not specific on activity type. Previous reports have found that girls and boys are physical active in different ways; girls are more active on their own or in activities such as dance, while boys are more active in sports (Bakken, 2016; Seippel et al., 2011). Since the PA item used in this paper does not consider the specific activity type, it might have captured the PA of many adolescents, regardless of whether they were active on their own or in sports. Reports in Norway that have found that boys and girls are approximately equally active have measured many different activities, and found that girls and boys are just active in different ways (Bakken, 2016; Seippel et al., 2011). Other reasons for this finding can also be that PA is popular among Norwegian adolescents and many engage in it (Bakken, 2016). The Norwegian adolescent generation is also well-adjusted, doing well, have many friends and are active in leisure time activities, such as PA (Bakken, 2016; Samdal et al., 2016).

The second aim of this article was to investigate the association between physical activity (PA), stress and the outcome, self-esteem (SE), in adolescence. First, the results showed that stress had a negative association with SE in adolescents, controlled for all other variables. In addition, out of all the variables in this study, stress had the strongest bivariate correlation with SE, and the strongest association with SE in the regression analyses. That stress has a negative association with SE in adolescence is in line with other studies (Byrne et al., 2007; Moksnes et al., 2016; Moksnes & Espnes, 2011; Schraml et al., 2011). Stress in adolescence can to some degree be normal and unavoidable due to the rapid and large developments, transitions and changes in this period. However, if the amount of stress exceeds adolescents' capacity to handle it, then stress can have a negative impact on their health and well-being (Byrne et al., 2007; Moksnes & Espnes, 2011). To experience life as stressful and not having the capacity or enough resources to handle it, might be negative for one's SE. Furthermore, Schraml et al. (2011) have found that adolescents with high stress levels experience less control in their life, feels worse about themselves and have more sleep problems. Additionally, in adolescence, a higher stress level is also found to be related to other negative outcomes,

such as depression symptoms and anxiety (Byrne et al., 2007; Moksnes et al., 2016; Moksnes et al., 2014), which might in turn impact adolescents' SE negatively.

The results in this study found that PA was positively associated with SE in adolescents controlled for all other variables. That PA is positively associated with SE in adolescents is also found in other studies (Biddle & Asare, 2011; Eime et al., 2013; Ekeland et al., 2005; Liu et al., 2015; Lubans et al., 2016; Moksnes et al., 2010; Schmalz et al., 2007). However, there are also some studies who have not found an association between PA and SE in adolescents (Kahn et al., 2008; Van Dijk et al., 2016). Regarding PA's association with SE, there can be many explanations for the finding in this study. To mention some, it is believed/hypothesized that PA leads to improvements in different physical self-perceptions, such as perceived sport competence, physical strength, physical condition and body attractiveness, which in turn leads to improvements in physical self-esteem, which then lastly leads to improvements in global self-esteem (Lindwall & Aşçi, 2014). This view on the association between PA and SE comes from Fox and Corbin (1989) who made the model "the physical self-perception profile (PSPP)", and Sonstroem and Morgan (1989) who made the model "the exercise and self-esteem model (EXSEM)", which was expanded later by Sonstroem et al. (1994) to also include the PSPP. The review of Lubans et al. (2016) have found a causal link between PA, improvements in variants of these physical self-perceptions and improvement in SE in adolescents. Eime et al. (2013) has similar findings in adolescence.

The item used to measure PA in this paper is not specific on type of PA or context and can therefore not say what type of PA the adolescents in the study engaged in. It might be that different activities or contexts can influence adolescents SE differently. For instance, Liu et al. (2015) found that PA in school had a stronger impact on SE in adolescents compared to other contexts, and Eime et al. (2013) found that participating in organized and/or team sports had a stronger effect on SE in adolescents compared to individual sports. Furthermore, there can also be many other ways PA influence SE, such as through biological effects (Clow & Edmunds, 2014; Lubans et al., 2016), social factors (belongingness, friends, support, feedback), autonomy, feeling of being healthy and mastery etc. (Fox, 2003; Lindwall & Aşçi, 2014).

In the final regression model, PA had the smallest association with SE compared to the other variables that had a significant association with SE. The bivariate correlation was also small. The finding that PA had a small to moderate association with SE in adolescence is also found in other studies (Biddle & Asare, 2011; Ekeland et al., 2005; Liu et al., 2015). This might be because PA has a stronger association to physical self-esteem (Lindwall & Aşçi, 2014). In addition, there are many factors that influence SE, and the small association in this study may be due to, as Fox (2003) proposes, that SE is not only dependent on PA, many different factors influence SE simultaneously (p.99). The final regression model in this study explained 27 % of the variance in SE, implying that many other factors are associated with adolescents' SE. However, PA had a significant positive association with SE, and can thereby be used as a contributing factor for improving adolescents' SE. Note that this study has a cross sectional design, and can therefore not draw a conclusion regarding causality. There are hypotheses that the association between PA and SE can go either way, or that the association can be bidirectional (see Lindwall and Aşçi (2014, pp. 85-99) for more information on this).

In this study, age had a non-significant association to SE. This may indicate that SE is fairly stable through adolescence, which is supported by other studies (Bachman et

al., 2011; Birkeland et al., 2012; Moksnes et al., 2016; Morin, Maïano, Marsh, Nagengast, & Janosz, 2013). SE as a construct is viewed to be fairly stable, and a change in SE level takes time (Guindon, 2002; Orth & Robins, 2014; Sonstroem & Morgan, 1989). In addition, through the adolescent period, adolescents develop and become more mature (Demo, 2001), and based on the theory positive youth development, many adolescents can have a healthy and positive development (Eime et al., 2013; Lerner, Phelps, Forman, & Bowers, 2009).

Regarding socioeconomic status (SES), results in this study found that parents' level of education had a non-significant association with SE when controlled for all other variables in the regression analysis, while family economy had a significant positive association with SE, indicating that higher family economy is associated with higher SE. That higher SES is associated with higher SE in adolescents is also found in other studies (Bachman et al., 2011; Boden et al., 2008; Twenge & Campbell, 2002). However, one study did not find an association between SES and SE in adolescence (Erol & Orth, 2011). Moreover, low SES can be related to stress, stigma and not being able to keep up materialistic with peers, which can be negative for SE (Demo, 2001; McLoyd et al., 2009), which may contribute in explaining the findings in this study.

Strengths and limitations

The data set used in this study has a large sample size and a relatively high response rate. Furthermore, it uses well validated scales, which also had a good internal consistency (Cronbach's alpha in Self-esteem scale $\alpha = 0.90$, Stress scale $\alpha = 0.94$). The data is from a cross-sectional study, thus one cannot draw a conclusion regarding causality. A longitudinal design would therefore have strengthened the study. All the data is based on self-report instruments, which can be sensitive to self-report bias and the questionnaire type (Guindon, 2002, 2010).

There may also be some limitations when measuring physical activity (PA) with self-report questionnaires. Firstly, it is sensitive to recall bias, as well as over- or underestimation (Ekelund, Tomkinson, & Armstrong, 2011; Taylor, 2014), where Ekelund et al. (2011, p. 860) and Hallal et al. (2012, p. 254) writes that most common is overestimation. Secondly, people can vary in what they regard as PA (Hallal et al., 2012; Taylor, 2014), and adolescents may then have considered the PA item differently. However, self-reported PA is one of the most common ways to measure PA, as it is both cost-effective and allows one to gather large amounts of data (Taylor, 2014). Furthermore, the PA item used in this study measures the frequency of PA and therefore cannot say anything about the context or type of PA. Some studies have found different effects on SE based on context and type of PA (Eime et al., 2013; Liu et al., 2015). However, comparing activity types was not part of the focus of the present study, such that the PA item used might be more relevant to the majority of the adolescents, rather than to only those active in a specific activity.

It is also important to note that there might be other factors important for understanding self-esteem (SE) in adolescence that is not included in the present study. This is also reflected in the final regression model, which explained 27 % of the variance in SE. Lastly, the survey used in this study is conducted in rural municipalities, which raises the question of the generalizability of the results. For example, there might be urban-rural differences in PA patterns (Bauman et al., 2012; Hallal et al., 2012). This

may be due to a wider range of activities available in cities than in rural districts. On the other hand, in rural districts there might be large access to nature, which may allow for other activity types than in cities.

Conclusion

This study found significant gender differences in self-esteem (SE) and stress in adolescence, where boys had a higher SE, and girls scored higher on stress. No gender difference was found in relation to physical activity (PA). Higher levels of stress experience was found to be significantly negative for adolescents' SE. The results support the significant positive role of PA in association with SE in adolescence. These findings have high relevance for public health, both in preventive work and health promotion. Interventions should focus on strengthening adolescents' ability to cope with stress, which may be especially important for girls. Adolescents from families with low socioeconomic status (SES) might also be an important target group for SE interventions, since this study found that a higher SES was associated with higher SE. One of the ways of strengthening adolescents' SE can be to promote PA. Schools and municipalities should ensure that they offer a wide range of activities, so that adolescents find an activity that they like, strengthening the possibility that they stay physical active and thereby gain the positive effects PA can have on SE.

This study had a cross-sectional design and can therefore not say anything about the causality between the factors investigated. There might also be a reciprocal association. Future studies with a longitudinal design should investigate this further. Studies investigating the hypotheses/ mechanisms in the association between PA and SE, such as physical self-esteem, different physical self-perceptions (e.g. perceived physical conditioning, strength, sport competence, physical appearance), social factors etc., are also recommended. This may, perhaps, allow organizing PA so that adolescents can achieve these mechanisms, and, thereby, increase SE.

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Main Conclusion

This master's thesis investigated the adolescent period, self-esteem, physical activity and the association between physical activity and self-esteem in adolescents. Age, gender, stress and socioeconomic status (SES) were also briefly investigated in relation to self-esteem and physical activity. The theoretical article investigated the theoretical and empirical literature on these items, and the empirical article was a summary of these findings, in addition to a quantitative investigation with statistical analyses.

The level of self-esteem is highly important in adolescence in regards to several life factors and can also influence later life. Low self-esteem is, for example, common among adolescents who have mental health symptoms or disorders. A finding from both the literature search and the statistical analyses was that boys have a higher self-esteem than girls. Moreover, both articles found that girls experience more stress than boys, and that stress is negatively associated with self-esteem in adolescence. This indicates that girls may be an important target group for self-esteem and stress reduction interventions. The statistical analyses also revealed that higher SES was associated to higher self-esteem, and adolescents from families with low SEs may therefore also be an important target group.

The results from the empirical article were in line with the majority of previous studies, as physical activity was found to be positively associated with self-esteem in adolescents. Many of the associations between physical activity and self-esteem in adolescents are small, and this was also the case in the statistical analyses in the empirical article. This may be because physical activity is more related to physical self-esteem. Nevertheless, promoting physical activity can be highly beneficial for the purpose of improving adolescents' self-esteem, in addition to improving their physical health with all its well-known benefits.

The empirical article had a cross-sectional design, and one can therefore not conclude on the causality between the items. There are hypotheses that the association between physical activity and self-esteem can go both ways, or be reciprocal. Longitudinal studies should investigate this further. There may also be other important factors for adolescents' self-esteem that are not included in this study.

Appendices

- A. Approval by the Regional Committees for Medical and Health Research Ethics
- B. The questionnaire «Oppvekst i Bygder»

Appendix A

Approval by the Regional Committees for Medical and Health Research
Ethics

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK midt	Øystein Lundestad	73597507	11.04.2017	2016/1165/REK midt
			Deres dato:	Deres referanse:
			01.03.2017	

Vår referanse må oppgis ved alle henvendelser

Geir Arild Espnes
NTNU

2016/1165 Oppvekst i bygder 2016

Forskningsansvarlig: NTNU

Prosjektleder: Geir Arild Espnes

Vi viser til søknad om prosjektendring datert 01.03.2017 for ovennevnte forskningsprosjekt. Søknaden om prosjektendring er behandlet på fullmakt av REK midts sekretariat, med hjemmel i helseforskningsloven § 11 og forskrift om behandling av etikk og redelighet i forskning § 10.

Opprinnelig prosjekttale

Målet med undersøkelsen "Oppvekst i bygder 2016" er å følge opp tidligere datainnsamlinger fra 1996, 2001, 2006 og 2011 om oppvekst,- aktivitet- og helsevariabler blant ungdom 13-19 år i seks bygdekommuner i Sør-Trøndelag. Det er viktig for planlegging og implementering av forebyggende – og helsefremmende arbeid blant ungdom å vite mer om status og utvikling på disse atferds- og helsevariablene. Målet med undersøkelsen er å vitenskapelig å framskaffe kunnskap om ungdoms helse, oppvekst og trivsel.

Søknad om prosjektendring

Det vises til innsending av søknad om prosjektendring 1. mars. Ettersendte dokumenter (reviderte informasjonsskriv og protokoll) ble mottatt på mail 30. mars (vår ref. 2016/1165-5). Det søkes her om følgende endringer:

1. Endring av kontaktperson for forskningsansvarlig institusjon som følge av instituttsammenslåing;
2. Tre masteroppgaver basert på materialet.

Vurdering

REK midt har vurdert søknad om prosjektendring. Komiteen har mottatt reviderte informasjonsskriv og endret prosjektbeskrivelse for én av studentoppgavene hvor det var usikkert om framstillinga ville være personidentifiserende. Det oppgis nå at materialet kun vil bli sammenstilt og presentert på gruppenivå. Komiteen har ingen innvendinger mot denne prosedyren, som bidrar til å ivareta deltakernes anonymitet.

Komiteen har ingen forskningsetiske innvendinger mot endringene av prosjektet. Oppgavenes formål vurderes som klart innenfor hovedprosjektets formål og det samtykke som er gitt til bruk av opplysningene. Under forutsetning av at vilkårene nedenfor tas til følge, er hensynet til deltakernes velferd og integritet fremdeles godt ivaretatt.

Vilkår for godkjenning

1. Godkjenninga er gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknaden, protokollen og prosjektendringene datert 1. mars 2017. Prosjektet må også gjennomføres

iht. tidligere vedtak i saken og de bestemmelser som følger av helseforskningsloven (hfl.) med forskrifter.

2. Komiteen forutsetter at ingen personidentifiserbare opplysninger kan framkomme ved publisering eller annen offentliggjøring.

Vedtak

Regional komité for medisinsk og helsefaglig forskningsetikk Midt-Norge godkjenner søknad om prosjektendring med de vilkår som er gitt.

Klageadgang

Du kan klage på komiteens vedtak, jf. forvaltningsloven § 28 flg. Klagen sendes til REK midt. Klagefristen er tre uker fra du mottar dette brevet. Dersom vedtaket opprettholdes av REK midt, sendes klagen videre til Den nasjonale forskningsetiske komité for medisin og helsefag for endelig vurdering.

Med vennlig hilsen

Hilde Eikemo
Sekretariatsleder, REK midt

Øystein Lundestad
Rådgiver

Kopi til: *postmottak@svt.ntnu.no; rek-ism@mh.ntnu.no; rek-midt@mh.ntnu.no*

Appendix B

The questionnaire «Oppvekst i Bygder»

SPØRREUNDERSØKELSE OM OPPVEKST I BYGDER

Bakgrunn: Med dette inviterer vi deg til å delta i spørreundersøkelsen «Oppvekst i bygder». Undersøkelsen gjennomføres blant ungdommer i ungdomsskole og videregående skole i seks bygdekommuner i Sør-Trøndelag. Undersøkelsen gjennomføres ved NTNU Senter for helsefremmende forskning og Institutt for sosiologi og statsvitenskap, NTNU

Hva innebærer undersøkelsen? Vi ber deg om å svare på spørsmålene i spørreskjemaet individuelt i løpet av en skoletime. Spørsmålene handler om hvordan du opplever helsa di, om bruk av rusmidler, deltakelse i idrett og fysisk aktivitet, trivsel i nærmiljøet og fritidsaktiviteter. Alle som deltar i undersøkelsen er anonyme, og alle opplysninger behandles konfidensielt.

Mulige fordeler og ulemper: Å svare på spørreskjemaet har ingen kjente negative konsekvenser. Bidraget ditt som deltaker kan gi viktig kunnskap om ungdoms opplevelse av hverdagsliv, helse og trivsel i bygdekommuner. Har du likevel behov for å prate med noen om spørsmålene i undersøkelsen, kan du ta kontakt med helsesøster ved din skole.

Frivillig deltakelse: Det er frivillig å delta i undersøkelsen, og det er ikke en del av skolens undervisning. Hvis du ikke vil delta, har det ingen konsekvenser for deg, og du kan i stedet jobbe med skolearbeid og levere blankt spørreskjema. Elever over 16 år sier ja til å være med ved å levere utfylt spørreskjema. Elever under 16 år må ha skriftlig tillatelse fra foresatte for å være med. Siden deltakerne i denne undersøkelsen er anonyme, er det ikke mulig å trekke seg etter at skjemaet er levert inn.

Prosjektet er godkjent av Regional komité for medisinsk og helsefaglig forskningsetikk, Midt-Norge (REK). Av kontrollhensyn vil prosjektdata bli oppbevart i 5 år etter at sluttmelding er sendt til REK.

Takk for at du er villig til å delta i undersøkelsen!

Jan Erik Ingebrigtsen

Institutt for sosiologi og statsvitenskap / NTNU Samfunnsforskning AS, Senter for skole og idrettsfag, tlf. 73 59 17 67.

Geir Arild Espnes

Institutt for sosialt arbeid og helsevitenskap / NTNU Senter for helsefremmende forskning, tlf. 73 41 21 52.



Kunnskap for en bedre verden

LES DETTE FØR DU STARTER!	Skjemaet skal leses maskinelt. Vennligst følg disse reglene: <ul style="list-style-type: none">• <i>Bruk svart/blå kulepenn. Skriv tydelig, og ikke utenfor feltene. Kryss av slik: <input checked="" type="checkbox"/>.</i>• <i>Feilkryssinger kan strykes ved å fylle hele feltet. Kryss så i rett felt.</i>• <i>Sett bare ett kryss på hvert spørsmål om ikke annet er oppgitt.</i>
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A. BAKGRUNNSINFORMASJON

1. Er du jente \Rightarrow Jente..... ₁ eller gutt?: Gutt..... ₂
2. Hvilken klasse går du i? \Rightarrow 8. kl.... ₈ 9. kl.... ₉ 10. kl.... ₁₀ VGS1.... ₁₁ VGS2.... ₁₂ VGS3.... ₁₃
3. I hvilken måned er du født, \Rightarrow og i hvilket år \Downarrow ?
- Januar ₁ Mai ₅ September..... ₉
Februar ₂ Juni ₆ Oktober..... ₁₀
Mars ₃ Juli..... ₇ November..... ₁₁
April ₄ August..... ₈ Desember..... ₁₂
4. I hvilken kommune bor du? \Rightarrow Oppdal ₁ Midtre Gauldal..... ₃ Osen..... ₅
Melhus ₂ Orkdal ₄ Roan..... ₆
5. Hvor lenge har du bodd i denne kommunen? \Rightarrow Hele livet ₁ 5 – 10 år ₃
Over 10 år ₂ Under 5 år..... ₄

6. Hvor mange km unna skolen bor du? Vennligst oppgi avstanden i antall km med ett desimal. Vær nøye med å plassere tallene riktig før/etter komma! ⇨
- | | | | |
|--|--|--|---|
| | | | , |
|--|--|--|---|
7. Hvor bor du? ⇨ På gardsbruk ₁ I rekkehus.....₃
I enebolig.....₂ I leilighet.....₄
8. Har du eget rom? ⇨ Ja.....₁
Nei.....₂
9. Hva er dine foreldres/foresattes høyeste fullførte utdanning? ⇨
- | | | |
|---|---------------------------------------|---------------------------------------|
| | Mor
↓ | Far
↓ |
| Grunnskole..... | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₁ |
| Videregående skole..... | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₂ |
| Høgskole/universitet, opptil 4 år..... | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₃ |
| Høgskole/universitet, mer enn 4 år..... | <input type="checkbox"/> ₄ | <input type="checkbox"/> ₄ |
| Vet ikke..... | <input type="checkbox"/> ₅ | <input type="checkbox"/> ₅ |
- NB: Sett ett kryss for mor / kvinnelig foresatt, og ett for far / mannlig foresatt.
10. Hva er dine foreldres/foresattes yrkesmessige status? ⇨
- | | | |
|----------------------------|---------------------------------------|---------------------------------------|
| | Mor
↓ | Far
↓ |
| I arbeid på heltid..... | <input type="checkbox"/> ₁ | <input type="checkbox"/> ₁ |
| I arbeid på deltid..... | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₂ |
| Permittert/arbeidsløs..... | <input type="checkbox"/> ₃ | <input type="checkbox"/> ₃ |
| Hjemmeværende..... | <input type="checkbox"/> ₄ | <input type="checkbox"/> ₄ |
| Annet..... | <input type="checkbox"/> ₅ | <input type="checkbox"/> ₅ |
- NB: Sett ett kryss for mor / kvinnelig foresatt, og ett for far / mannlig foresatt.
11. Hvordan har familiens økonomi vært de siste to årene? ⇨
- | | |
|--|---------------------------------------|
| Vi har hatt dårlig råd hele tida..... | <input type="checkbox"/> ₁ |
| Vi har stort sett hatt dårlig råd..... | <input type="checkbox"/> ₂ |
| Vi har verken hatt dårlig råd eller god råd..... | <input type="checkbox"/> ₃ |
| Vi har stort sett hatt god råd..... | <input type="checkbox"/> ₄ |
| Vi har hatt god råd hele tida..... | <input type="checkbox"/> ₅ |
- NB: Her setter du bare ett kryss.

B. FRITIDSAKTIVITETER

Her er en del aktiviteter som unge mennesker driver med i fritiden. Hvor ofte gjør du hver av disse tingene? Ett kryss på hver linje.

	Aldri 1	Sjelden 2	Ca. én dag i uka 3	2 - 3 dager i uka 4	4 - 7 dager i uka 5
1. Spiller musikkinstrument.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Hører på musikk.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Leser bøker, magasiner eller aviser.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Har venner på besøk.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Røyker.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Gjør husarbeid eller annet arbeid hjemme.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Sitter med familien og snakker om ting.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Er sammen med venner utendørs (på gata, veien e.l.).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Er på besøk hos venner.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Spiser «ute» med venner (på kafé e.l.).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Drar til sentrum for å kikke i butikker.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Går på kino, konserter eller fester.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Er ute for å danse (f.eks. på diskotek).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Drikker alkohol.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Snuser.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvor ofte gjør du hver av disse tingene? *Ett kryss på hver linje.*

	Aldri 1	Sjelden 2	Ca. én dag i uka 3	2-3 dager i uka 4	4-7 dager i uka 5
16. Deltar i organisert fritidsaktivitet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Spiller dataspill/mobilspill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Er på sosiale medier (f.eks. Instagram, Snapchat)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Er «på nett» for øvrig (f.eks. surfing, streaming, Youtube, e-post, blogger)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. FYSISK AKTIVITET OG IDRETT

	Aldri 1	Sjelden 2	Ca. én dag i uka 3	2-3 dager i uka 4	4-7 dager i uka 5
1. Hvor mange av dagene i <i>en vanlig uke</i> er du så aktiv at du blir andpusten eller svett?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I løpet av <i>de fire siste ukene</i> , hvor ofte deltok du i idrett/ sport eller fysisk aktivitet hardt nok til at du <i>pustet fort, svettet</i> eller at <i>hertet banket fort</i> i 20 minutter?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Aldri 1	Sjelden 2	Ca. én dag i uka 3	2-3 dager i uka 4	4-7 dager i uka 5
3. Hvor ofte trener du i hver av disse sammenhengene? ⇨					
1. Trener/konkurrerer i idrettslag ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Trener utenom idrettslag	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Trener i treningsstudio.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Aldri 1	Sjelden 2	Ca. én dag i uka 3	2-3 dager i uka 4	4-7 dager i uka 5
4. Hvor ofte trener du på følgende måter (i sesongen)? ⇨					
1. Dansetrening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Går på ski (langrenn).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Alpinski/snowboard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Fotball.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Håndball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Sykler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Jogger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Fotturer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Trener på andre måter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Svært enig 1	Enig 2	Uenig 3	Svært uenig 4
5. Hvor enig eller uenig er du i hvert av disse utsagnene om din egen trening og fysiske aktivitet? ⇨				
1. Jeg er i svært god form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Jeg trener ikke	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg trener for å holde meg i god form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Jeg trener for å være sammen med venner.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Jeg trener for å bli flink i idrett	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Jeg trener når jeg ikke har annet å gjøre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Jeg er i dårlig form.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Fysisk aktivitet er viktig for helsa mi som voksen....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Vennskap er viktigere enn å vinne i idrett	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Jeg er flink i idrett	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Jeg trener fordi utseendet er viktig for meg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Deltar du, eller har du deltatt tidligere i disse idrettene i idrettslag? ⇒	Deltar nå 1	Deltok før, men har sluttet 2	Har aldri deltatt 3
1. Håndball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Fotball.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Ski (langrenn og/eller alpint).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Annen idrett i idrettslag.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D. OM HJEMSTEDET DITT

Hvor enig eller uenig er du i disse utsagnene om hjemstedet ditt?

NB: Hvis du bor på hybel: Tenk på området rundt skolen.

	Svært enig 1	Enig 2	Uenig 3	Svært uenig 4
1. Dette er et fint sted for barn å vokse opp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Fritidstilbudet er viktig for min trivsel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Dette er et fint sted å bo for unge mennesker som meg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Det er for få møtesteder for unge mennesker her	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Her sladrer folk om alt mulig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Det er ikke nok å gjøre for unge mennesker her	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Dette stedet mangler transport for å komme dit jeg ønsker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Det er ingen ting å gjøre her for unge mennesker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Det er for lite frihet her på stedet til å være slik en ønsker.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Unge mennesker utsettes for mobbing og angrep her.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Det er vanskelig å være seg selv her.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Ungdomsgjenger er et problem her	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Det er ikke trygt å gå ut om kvelden her	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Mange av mine venner her på stedet drikker alkohol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Unge mennesker drikker for mye her på stedet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Jeg har følt press om å bruke narkotika her på stedet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Jeg har vært nødt til å velge bort fritidsaktiviteter her på stedet av økonomiske grunner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E. OM SKOLEN

Hvor enig eller uenig er du generelt i disse utsagnene om skolen?

Husk: Bare ett kryss på hver linje.

	Svært enig 1	Enig 2	Uenig 3	Svært uenig 4
1. Jeg trives på skolen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Jeg jobber hardt på skolen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg lærer interessante og nyttige ting på skolen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Lærerne er interesserte og hjelpsomme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Jeg er glad når jeg kan være borte fra skolen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Jeg blir lei av lærere som forteller hva jeg skal gjøre.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Jeg synes skolearbeidet er lett	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Jeg har blitt plaget/mobbet av andre elever på skolen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F. TRIVSEL

	Svært godt 1	Godt 2	Middels 3	Dårlig 4	Svært dårlig 5
1. Hvor godt trives du på trening?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Hvor godt trives du i idrettskonkurranser?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Hvor godt trives du når du trener hardt fysisk?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Hvor godt trives du når du er hjemme?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Hvor godt trives du i teoritimer på skolen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Hvor godt trives du i kroppsøvingstimer på skolen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Hvor godt trives du i friminuttene på skolen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Hvor godt trives du i løpet av en vanlig dag?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

G. DINE TANKER OM FRAMTIDEN

Hvor enig eller uenig er du i disse utsagnene om tiden etter at du er ferdig på skolen?

	Svært enig 1	Enig 2	Uenig 3	Svært uenig 4
1. Jeg ønsker å bo i dette området i framtiden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Jeg ønsker å flytte herfra for noen år, og så flytte tilbake hit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg ønsker å flytte herfra, og aldri flytte tilbake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Jeg ønsker å ta vare på miljøet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Jeg ønsker å studere etter videregående skole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Jeg ønsker å være med på å forbedre miljøet der jeg bor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Framtiden ser bra ut for unge mennesker her på stedet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Jeg vil begynne å jobbe så fort jeg kan etter skolen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Det vil bli vanskelig for meg å finne en passende jobb her	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

H. DU OG HELSA DI

	Svært dårlig 1	Dårlig 2	Verken god eller dårlig 3	God 4	Svært god 5
1. Hvordan har helsa di vært <i>det siste året</i> ? ⇒	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Hvor får du viktig informasjon om helse? ⇒	1. Helsesøster <input type="checkbox"/>	4. Foresatte <input type="checkbox"/>	7. TV..... <input type="checkbox"/>
	2. Lege <input type="checkbox"/>	5. Venner <input type="checkbox"/>	8. Ukeblader <input type="checkbox"/>
NB: Her kan du sette flere kryss!	3. Lærere <input type="checkbox"/>	6. Internett <input type="checkbox"/>	9. Annet..... <input type="checkbox"/>

	Aldri 1	Sjelden 2	Én dag i uka 3	2-4 dager i uka 4	5-7 dager i uka 5
3. Hvor ofte gjør du følgende? ⇒					
1. Røyker.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Bruker snus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Drikker alkohol.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Spiser frokost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Spiser skolemåltid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Spiser middag	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Her er fem utsagn om tilfredshet med livet som helhet. Hvor godt eller dårlig stemmer hvert utsagn for deg og ditt liv?
- | | Stemmer | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | dårlig | | | | | | perfekt |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. På de fleste måter er livet mitt nær idealet mitt..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Forholdene i livet mitt er utmerket..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Jeg er fornøyd med livet mitt..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Så langt har jeg oppnådd de viktige tingene jeg ønsker i livet..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Hvis jeg kunne leve livet på nytt, ville jeg nesten ikke forandret noe... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

I. «LYKKETERMOMETERET»

Hvor lykkelig/glad eller ulykkelig har du vært i løpet av den siste uken?

Kryss av i bare én av boksene.

- | | | | |
|---|---|--------------------------|----|
| Ekstremt lykkelig (Følelse av begeistring) ----- | ⇒ | <input type="checkbox"/> | 10 |
| Veldig lykkelig (Føler meg virkelig bra og oppstemt) ---- | ⇒ | <input type="checkbox"/> | 9 |
| Ganske lykkelig (Føler meg bra) ----- | ⇒ | <input type="checkbox"/> | 8 |
| Nokså lykkelig (Føler meg rimelig bra og munter) ----- | ⇒ | <input type="checkbox"/> | 7 |
| Litt lykkelig (Akkurat litt mere enn nøytral) ----- | ⇒ | <input type="checkbox"/> | 6 |
| Nøytral/midt i mellom ----- | ⇒ | <input type="checkbox"/> | 5 |
| Litt ulykkelig (Akkurat litt mere enn nøytral) ----- | ⇒ | <input type="checkbox"/> | 4 |
| Nokså ulykkelig (Føler meg litt «nedfor») ----- | ⇒ | <input type="checkbox"/> | 3 |
| Ganske ulykkelig (Føler meg ganske deprimert) ----- | ⇒ | <input type="checkbox"/> | 2 |
| Veldig ulykkelig (Føler meg veldig deprimert) ----- | ⇒ | <input type="checkbox"/> | 1 |
| Ekstremt ulykkelig (Totalt deprimert og «nedfor») ----- | ⇒ | <input type="checkbox"/> | 0 |

J. HELSEPLAGER

Har du hatt noen av disse plagene i løpet av de 4 siste ukene?

- | | Ikke plaget
1 | Litt plaget
2 | Nokså plaget
3 | Svært plaget
4 | Ikke aktuelt
↓ |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Astma eller pipende bryst | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Forkjølelse eller influensa | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Følt deg nervøs, bekymret eller redd | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Hodepine eller migrene | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Smerter i armene, beina eller ryggen..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Følt deg ensom | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Svimmelhetsanfall eller har besvimt | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Magesmerter/vondt i magen | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Følt deg trist, ulykkelig eller nedfor | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Allergi | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Vært irritabel eller i dårlig humør..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Kviser, utslett eller andre hudproblemer | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

K. STRESS

1. Her er en liste med ting eller situasjoner du kanskje opplever som stressende. Hvor stressende har hver av disse tingene eller situasjonene vært for deg i løpet av det siste året?
 NB: Hvis det er noe du ikke har opplevd, krysser du i rute nr. 1 (Ikke stressende).

Hvor stressende er (det)...	Ikke stressende 1	Litt stressende 2	Moderat stressende 3	Ganske stressende 4	Svært stressende 5
1. ... uenigheter mellom deg og faren din?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. ... å stå opp tidlig om morgenen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. ... å være nødt til å lære ting du ikke forstår?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. ... å ha lærere som forventer for mye av deg?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. ... å bli ertet?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. ... å ha vanskeligheter med noen skolefag?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. ... å følge regler du er uenig i hjemme?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. ... å måtte lese ting du ikke er interessert i?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. ... å bli oversett eller avvist av en person du er inter- essert i?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. ... å ikke ha nok tid til å ha det gøy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. ... uenigheter med søsknene dine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. ... å ikke ha nok tid til å drive med fritidsaktiviteter?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. ... å ha for mye hjemmelekser?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. ... å ikke få nok tilbakemelding på skolearbeidet tids- nok til at det er hjelp i det?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. ... å få forholdet til kjæresten til å fungere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. ... å bli nedvurdert av vennene dine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. ... uenigheter mellom foreldrene dine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. ... å ha for mye fravær fra skolen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. ... hvordan du ser ut?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. ... uenigheter mellom deg og mora di?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. ... å gå på skolen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. ... å ikke ha nok tid til kjæresten din?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. ... lærere som erter deg?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. ... å adlyde regler du er uenig i på skolen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. ... å ikke bli hørt på av lærere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. ... å ikke komme overens med kjæresten din?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. ... mangel på respekt fra lærere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. ... uenigheter mellom deg og dine venner?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. ... å ikke komme overens med lærerne dine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. ... å slå opp med kjæresten?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

L. PSYKISK VELVÆRE

Her er noen utsagn om følelser og tanker. Vennligst kryss av for det som best beskriver din opplevelse de siste 2 ukene.

	Ikke i det hele tatt 1	Sjelden 2	En del av tiden 3	Ofte 4	Hele tiden 5
1. Jeg har vært optimistisk med hensyn til fremtiden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Jeg har følt meg nyttig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg har følt meg avslappet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Jeg har følt interesse for andre mennesker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Jeg har hatt masse energi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Jeg har håndtert problemer godt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Jeg har tenkt klart	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Jeg har vært fornøyd med meg selv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Jeg har følt nærhet til andre mennesker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Jeg har følt meg selvsikker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Jeg har vært i stand til å ta beslutninger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Jeg har følt meg elsket.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Jeg har vært interessert i nye ting.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Jeg har vært i godt humør.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

M. DINE FØLELSER AKKURAT NÅ

Vennligst kryss av for det som best beskriver hvordan du føler deg akkurat nå, i dette øyeblikket.

	Ikke i det hele tatt 1	Sjelden 2	En del av tiden 3	Ofte 4	Hele tiden 5
1. Jeg føler meg rolig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Jeg føler meg trygg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg er anspent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Jeg føler at jeg er under press	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Jeg føler meg vel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Jeg føler meg oppskaket.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Jeg er bekymret for at noe uheldig kan skje	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Jeg er fornøyd.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Jeg føler meg skremt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Jeg føler meg bra	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Ikke i det hele tatt 1	Sjelden 2	En del av tiden 3	Ofta 4	Hele tiden 5
11. Jeg har selvtilitt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Jeg føler meg nervøs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Jeg er skvetten.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Jeg føler meg ubesluttet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Jeg er avslappet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Jeg føler meg tilfreds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Jeg er bekymret	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Jeg føler meg forvirret.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Jeg føler meg stabil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Jeg føler at jeg har det behagelig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

N. DINE FØLELSER DEN SISTE UKA

Vennligst kryss av for det som best beskriver hvordan du har følt deg *den siste uka, inkludert i dag*.

	Aldri 1	Nesten aldri 2	Noen ganger 3	Veldig ofte 4	Alltid 5
1. Jeg har følt meg trist eller ulykkelig.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Jeg har følt meg på gråten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg har følt skyld uten å vite hvorfor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Jeg har mistet interessen for ting som har vært viktige for meg før	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Jeg har ikke likt aktiviteter som jeg gjorde før	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Jeg har følt meg engstelig, rastløs eller irritabel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Jeg har mistet troen på meg selv eller undervurderer meg selv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Jeg har hatt konsentrasjonsvansker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Jeg har hatt vanskelig for å ta avgjørelser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Jeg har følt det som om jeg har mislykkes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Jeg har følt at ting alltid går galt, uansett hvor hardt jeg prøver.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Jeg har hatt søvnforstyrrelser – sovet mer eller mindre enn vanlig, eller hatt avbrudd i søvnen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Appetitten min har vært unormal – jeg har spist mer eller mindre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Jeg har følt at det krever større innsats å gjøre ting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Jeg har følt meg trøtt eller har hatt veldig lite energi.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

O. DIN SELVFØLELSE

Hvor enig eller uenig er du i hvert av disse utsagnene om din egen selvfølelse?

	Sterkt uenig 1	Uenig 2	Enig 3	Sterkt enig 4
1. I det store og hele er jeg fornøyd med meg selv.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Av og til synes jeg ikke at jeg er god i noe i det hele tatt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg føler jeg har flere gode egenskaper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Jeg er i stand til å gjøre ting like bra som de fleste andre folk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Jeg føler at jeg ikke har mye å være stolt av	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Til tider føler jeg meg absolutt ubrukelig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Jeg føler at jeg er en person som er verdt noe, i alle fall på lik linje med andre..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Jeg skulle ønske jeg hadde mer selvrespekt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Alt i alt har jeg en tendens til å føle meg mislykket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Jeg har en positiv holdning til meg selv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

P. OPPLEVELSE AV SAMMENHENG

Her er en serie med spørsmål som omhandler ulike sider ved livet vårt. Vennligst kryss av for det tallet som best uttrykker det som passer for deg.

1. Opplever du at du ikke bryr deg om det som skjer i omgivelsene dine?

1 2 3 4 5 6 7
Veldig sjelden eller aldri Veldig ofte

2. Har du opplevd at du er blitt overrasket over oppførselen til personer du trodde du kjente godt?

1 2 3 4 5 6 7
Det har aldri hendt Det hender alltid

3. Har det hendt at personer du stoler på har skuffet deg?

1 2 3 4 5 6 7
Det har aldri hendt Det hender alltid

4. Inntil nå har livet mitt ...

1 2 3 4 5 6 7
vært helt uten mål og mening hatt mål og mening

5. Føler du deg urettferdig behandlet?

1 2 3 4 5 6 7
Veldig ofte Veldig sjelden eller aldri

6. Opplever du ofte at du er i en uvant situasjon og at du er usikker på hva du skal gjøre?

1 2 3 4 5 6 7
Veldig ofte Veldig sjelden eller aldri

7. Er dine dagligdagse aktiviteter en kilde til ...

1 2 3 4 5 6 7
glede og tilfredsstillelse? smerte og kjedsomhet?

8. Har du veldig motstridende tanker og følelser?

Veldig ofte Veldig sjelden eller aldri

9. Skjer det at du har følelser som du helst ikke vil føle?

Veldig ofte Veldig sjelden eller aldri

10. Alle mennesker vil kunne føle seg som tapere iblant. Hvor ofte føler du deg slik?

Aldri Veldig ofte

11. Hvor ofte opplever du at du over- eller undervurderer betydningen av noe som skjer?

Du over- eller undervurderer det som skjer Du ser saken i rett sammenheng

12. Hvor ofte føler du at de tingene du gjør i hverdagen er meningsløse?

Veldig ofte Veldig sjelden eller aldri

13. Hvor ofte har du følelser du ikke er sikker på at du kan kontrollere?

Veldig ofte Veldig sjelden eller aldri

Q. RESSURSER OG MESTRING

Hvor enig eller uenig er du i hvert av disse utsagnene om hvordan du har hatt det *den siste måneden*, og om hvordan du har tenkt og følt om deg selv og om mennesker omkring deg som er viktige for deg.

	Helt enig 1	Litt enig 2	Middels 3	Litt uenig 4	Helt uenig 5
1. Jeg kommer i mål dersom jeg står på.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Jeg fungerer best når jeg lager meg klare mål.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Jeg har noen venner/familiemedlemmer som pleier å oppmuntre meg.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Jeg er fornøyd med livet mitt til nå.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I familien min er vi enige om hva som er viktig i livet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Jeg får lett andre til å trives sammen med meg.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Jeg vet hvordan jeg skal nå målene mine.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Jeg legger alltid en plan før jeg begynner med noe nytt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Vennene mine holder alltid sammen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Jeg trives godt i familien min.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Jeg har lett for å finne nye venner.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Når det er umulig for meg å forandre på ting, slutter jeg å gruble på dem.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | Helt enig
1 | Litt enig
2 | Middels
3 | Litt uenig
4 | Helt uenig
5 |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 13. Jeg er flink til å organisere tiden min | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Jeg har noen nære venner/familiemedlemmer som virkelig bryr seg om meg | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. I familien min er vi enig om det meste | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Jeg er flink til å snakke med nye folk | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Jeg føler jeg er dyktig | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. I familien min har vi regler som forenkler hverdagen | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Jeg har alltid noen som kan hjelpe meg når jeg trenger det | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Når jeg skal velge noe vet jeg oftest hva som blir riktig for meg | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Familien min ser positivt på tiden framover selv om det skjer noe veldig leit | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Jeg finner alltid noe artig å snakke om | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Min tro på meg selv får meg gjennom vanskelige perioder | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. I familien min støtter vi opp om hverandre | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Jeg finner alltid på noe trøstende å si til andre som er lei seg | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. I motgang har jeg en tendens til å finne noe bra jeg kan vokse på | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. I familien min liker vi å finne på ting sammen | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Jeg har noen nære venner/familiemedlemmer som setter pris på egenskapene mine | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

R. MESTRINGSTRO

- | | Helt galt
1 | Nokså galt
2 | Nokså riktig
3 | Helt riktig
4 |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Jeg klarer alltid å løse vanskelige problemer hvis jeg prøver hardt nok | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Hvis noen motarbeider meg, så kan jeg finne måter og veier for å få det som jeg vil | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Det er lett for meg å holde fast på planene mine og nå målene mine | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Jeg føler meg trygg på at jeg ville kunne takle uventede hendelser på en effektiv måte | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Takket være ressursene mine så vet jeg hvordan jeg skal takle uventede situasjoner | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Jeg kan løse de fleste problemer hvis jeg går tilstrekkelig inn for det | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Jeg beholder roen når jeg møter vanskeligheter fordi jeg stoler på mestringsevnen min | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Når jeg møter et problem, så finner jeg vanligvis flere løsninger på det | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Hvis jeg er i knipe, så finner jeg vanligvis en løsning | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Samme hva som hender, så er jeg vanligvis i stand til å takle det | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

