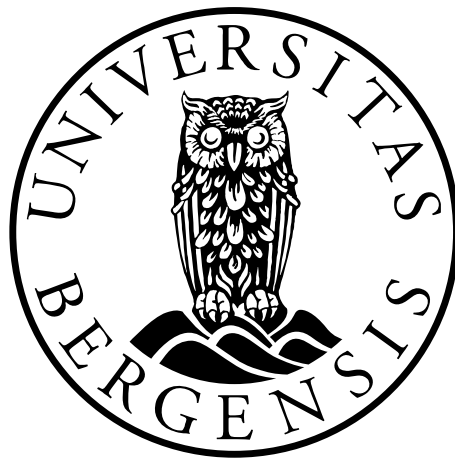# "Anxiety and depressive symptoms in adolescence in relation to teacher support, socioeconomic status and gender differences"

Helene Nilsen

Masteroppgave

Masterprogram i helsefag - Helsefremmende arbeid og helsepsykologi

HEMIL–senteret

Det psykologiske fakultet

Vår 2018

Preface

The reason that I chose to write my master thesis about anxiety and depressive symptoms in adolescence, is due to my own interest in the topic. The interest has come about in later years following increased media attention and focus on the rising prevalence of such symptoms in the society. I was also interested in investigating whether the teachers may play a role in the development of anxiety and depressive symptoms in adolescence. When introduced to the Dream School Project at HEMIL, which research relates to health promotion and health psychology in schools, it felt natural for me to get involved.

Writing a master's thesis has been an educative process, both academically and personally. I started out with only an idea in my head, and through a cumbersome and sometimes frustrating way, this idea turned into a complete piece of work that I am proud to present. To help me along the way was my supervisor Ingrid Holsen, a research professor at HEMIL. I would like to give special thanks to Ingrid for supporting me through the process by clear and constructive feedback. This ensured study progression and contributed to reaching the goal and final product. I would also like to thank my family for encouraging words and patience throughout the process. Last, but not least, my dearest little children Nikolas and Matilde, you give me so much inspiration, joy and pride. Thank you.

Helene Nilsen

Bergen, mai 2018

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Abstract

The aim of this thesis was to investigate anxiety and depressive symptoms in adolescence in relation to teacher support, socioeconomic status and gender differences. To investigate this, the present study used a cross-sectional study design including 574 adolescents, of which 311 boys and 258 girls. Data was obtained through surveys based on validated measures. Descriptive statistics, correlation analysis and mediation analysis were performed to investigate the aim. 33.9% of the adolescents reported that they were bothered or distressed quite a lot or very bothered or distressed with anxiety and depressive symptoms, compared to 15-25 % in upper-secondary schools on national level. 25.3% of the girls and 8.6% of the boys reported such symptoms. The mean level of anxiety and depressive symptoms was 1.92 (on a scale x-x), 1.65 in boys and 2.24 in girls. The mean level of perceived teacher support was 3.71 (on a scale ranging from 1-5). Boys reported a significantly higher level of teacher support compared to girls, 3.86 and 3.55 respectively. Totally, 81.0% of the adolescents reported that they perceived the teachers as supportive, of which 50% of the boys and 31% of the girls perceived their teacher as supportive. A negative correlation between perceived teacher support and level of anxiety and depressive symptoms was found. The mean level of family income was reported to be 3.76 on a scale ranging from 1-5, with no significant gender differences found. However, anxiety and depressive symptoms correlated negatively with family income level. The relationship between family income level, anxiety and depressive symptoms, and teacher support was investigated by mediation analysis. Analysis found that teacher support partly mediated the relationship between socioeconomic status and anxiety and depressive symptoms in adolescence. The findings are discussed in light of Bourdieu's social capital theory, the health asset theory and self-determination theory. Study implications in the field of health promotion and health psychology, and suggestions for further research are presented.

Background

Anxiety and depressive symptoms are major health problems among children and adolescents in Norway today (Murberg & Bru, 2009). Between 15-20 % of Norwegian upper-secondary school students report experiencing depressive symptomatology and/or anxiety. Further, 5 % of students have been diagnosed with depression and 3-5% with anxiety. In a typical school class, usually there will be one student with an anxiety diagnosis, and two to three others will struggle with anxiety (Folkehelseinstituttet, 2015a, 2015b; Murberg & Bru, 2009).

Depressive symptoms and anxiety in adolescents are linked to poor academic performance and learning outcome (Murberg & Bru, 2009; Needham, Crosnoe, & Muller, 2004), and can lead to students dropping out of school (Krane, Karlsson, Ness, & Kim, 2016). It can increase the risk of not adapting to the environment and substance abuse (Folkehelseinstituttet, 2015a). Dropout further implies a significant risk of falling outside the labour market, increased consumption of healthcare and disability insurance. Thus, depressive symptoms in adolescence, can have far-reaching consequences across a variety of social phenomena (Needham et al., 2004), and the identification of variables that act as protective or risk factors for depression in adolescence is important (Murberg & Bru, 2009).

Early research examining the psychosocial aspects of depression among adolescents, focused mainly on individual factors. Over the past three decades and to the present day, researchers have been broadening their focus to include characteristics of the social environment (Undheim & Sund, 2005), where social support has been found to possibly reduce vulnerability to depression (Undheim & Sund, 2005).

Social support and positive relationships between teacher and student are one of several key factors that contribute to creating a positive learning environment for children and young students. It is suggested that such positive environments are linked to improved learning outcomes, feelings of well-being and belonging, positive behaviour, and reduced absence from school and dropout (Colarossi & Eccles, 2003; Helsedirektoratet, 2013; Krane, Karlsson, et al., 2016; Krane, Ness, Holter-Sorensen, Karlsson, & Binder, 2016; LaRusso, Romer, & Selman, 2008; Murberg & Bru, 2009; Undheim & Sund, 2005; Wang, Brinkworth, & Eccles, 2013; Yu, Li, Wang, & Zhang, 2016). Further, it is possible that such positive environment may be linked to reduced symptoms of depression and anxiety (Krane, Karlsson, et al., 2016). Conversely,

reduced social support from teachers was found to be associated with an increased level of depressive symptoms in students (De Wit, Karioja, Rye, & Shain, 2011).

In order to increase knowledge and awareness about the topic mental health in school, a conference was arranged by the Norwegian Directorate of Health and the Norwegian Directorate for Education and Training (Helsedirektoratet, 2013). The report that was drawn up after the conference, stated that the teachers' ability to establish supportive relationships with the students is a crucial factor in preventing adolescent depression and anxiety (Helsedirektoratet, 2013). The report also suggests that children and adolescents with depression or anxiety have poorer relationships with their teachers than students who do not struggle with these symptoms.

Overall, it appears that Norwegian schoolchildren enjoy going to school. Most of them find that teachers care about them, and they appreciate the social environment at school. However, some students are unhappy and are afraid to go to school. The proportion of unhappy students is about twice as high in the lowest socioeconomic groups compared with the highest (Bakken, Frøyland, & Sletten, 2016). Research has found that low socioeconomic status in childhood may increase the risk of developing depressive symptoms in adolescence and that girls are especially exposed (Wirback, Möller, Larsson, Galanti, & Engström, 2014). This tendency was evident in countries with even small differences in socioeconomic status, like in the Scandinavian countries. It actually seems like most health problems are more evident in lower social status groups of society compared to higher social status groups (Mackenbach, Meerding, & Kunst, 2011). It is suggested that he social conditions during childhood, may contribute to this observed association between inequality in health and quality of life.

It seems that the more socio-economic resources young people have at home, the higher quality of life they have (Bakken et al., 2016). Children and adolescents with few resources at home generally have somewhat more problematic relationships with their parents and friends, they are more often unhappy at school, and struggle more often with anxiety and depressive symptoms. They are also more susceptible to bullying and more pessimistic about the future. They are less likely to participate in organized leisure activities and spend more time on computers/TVs/iPads etc., compared to those growing up in families with more socio-economic resources at home (Bakken et al., 2016).

As mentioned in the previous paragraph, girls seem to be more prone to develop anxiety and depressive symptoms in adolescence. This is documented by others (Bakken, 2017; Nolen-

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Hoeksema S. in Holsen, 2009, p. 62), and recent reports state that twice as many girls are experiencing anxiety and depressive symptoms compared to boys in adolescence (Folkehelseinstituttet, 2014, 2018).

Knowing that the social environment might affect levels of anxiety and depressive symptoms, I wanted to investigate this phenomenon in a school context in relation to the students' relationship with their teachers. The present research focus is of interest as little research have been conducted on the relationship between anxiety and depressive symptoms and teacher support in Norwegian adolescents. Most research on the topic are from abroad and includes younger children. The age group 16-18 is interesting as it is a period in life with developmental changes for both body and mind. The possible mediating effect of teacher support on the relationship between socioeconomic status and the development of anxiety and depressive symptoms will also be examined.

Aim

The aim of this thesis was to investigate the relationship between socioeconomic status and anxiety and depressive symptoms in adolescence, and whether teacher support could have a mediating effect on this relationship. Gender differences in relation to anxiety and depressive symptoms, teacher support and family income was also investigated. Understanding more about the relationship between socioeconomic status, anxiety and depressive symptoms, and teacher support is interesting and important. Such knowledge might contribute in the work on reducing the prevalence of anxiety and depressive symptoms in adolescence.

Framework

Health promotion and health psychology

This master's thesis has its grounding roots in the field of health promotion and health psychology. What these aspects involve, will now further be elaborated on.

Health

In 1946 The World Health Organization (2017b) defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". However not

all agree on this definition by the WHO, and claim that such state is unachievable. Others define health as "the absence of disease" or in a more positive direction as "wellbeing" (Green & Tones, 2010). The "wellbeing" definition is a continuation of the definition by World Health Organization (2017b), and considers the human as a whole, where all physical, mental and social aspects of health are taken into account. The word health actually originates from the word "heal" meaning "whole". This can also be regarded as a holistic perspective where all aspects of the human are considered. Further, according to the definition by World Health Organization (2017b) which includes this term "wellbeing", all aspects of the human being must be considered to determine good health. The way health is conceptualised has implications for planning, implementing and evaluating the health promotion programmes (Green & Tones, 2010). In 1996 Antonowsky claimed that health and disease should not be viewed as being exposed to risk factors or not, but rather as a continuum where the individual can move up and down. He presented a salutogenic model which focus on conditions leading to wellness (Green & Tones, 2010). In this model, the term "salutogenesis" is a key concept. "Salutogenesis" focuses on the health enhancing aspect of health and the factors that determine to what extent people experience wellbeing. The degree of coping with the inherent stressors of life and the perceptions of disorder or chaos in ones life is central to the experience of wellbeing. The salutogenic approach aim to reduce chaos and the perception of chaos, and to produce a sense of coherence. Antonowsky defines coherence as: "a global orientation that express the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (Green & Tones, 2010, p. 12). The main elements that are involved in achieving a sense of coherence are comprehensibility, manageability and meaningfulness.

Further, it is necessary to address the importance of empowerment in relation to health. Empowerment can either be used as a synonym to health like "to be healthy is to be empowered", or it can be viewed as an instrument to achieve positive health, or third it can be viewed as both a terminal state and an instrument toward the state of positive health. In light of the holistic view on health, empowerment is also important for disease prevention and the management of personal goals in order to reach positive health (Green & Tones, 2010).

Put into context, wellbeing and disease may be seen as coexisting dimensions on the health continuum. This means that wellbeing may be affected by the presence of disease. However, it is possible and even desirable to have high levels of wellbeing regardless of illness being

present. In addition, there might be high or low levels of wellness even though disease is not present.

Health promotion

The World Health Organisation (WHO) has played an important part in the development of health promotion (Green & Tones, 2010). As mentioned WHO has a holistic view on health, starting with the 'Healt for All' movement in 1977 and the Declaration of Alma Ata in 1978. Primary healthcare was advised to embrace the impact they might have on health, and the Declaration emphasised the importance of a holistic view on health. In addition, emphasis were put on, for example health as a fundamental right, unacceptability of inequity in health, and the mutual relationship between health and social development. Health promotion was then defined as "the process of enabling people to increase control over, and to improve their health" (World Health Organization, 1986). Several international conferences followed, and The Ottawa Charter developed three strategies for working to promote health: advocacy, enabling and mediation. These strategies were meant to ensure the creation of conditions favourable to health, by creating an supportive environment and by ensuring that people have the necessary information and skills to make healthy choices. And further, mediation to ensure pursuit of health between different groups (Green & Tones, 2010). The Ottawa Charter also emphasise that individuals are responsible for their own health, but also a concern for others in the society. The following conference in Adelaide focused on creating health-enhancing environments that and contributing to making the healthy choice the easy choice. Especially, the needs of underprivileged and disadvantaged groups were acknowledged. A need for strong advocates was identified and community action was proposed as major driving force. In 1991, the Sundsvall Conference addressed the importance of the social environment, in addition to the physical environment on health. The influence that norms and culture have on health was recognised in addition to lifestyle, social isolation, and lack of sense of coherence. Collaborative work, community actions and empowerment were recognised as important factors in a 'democratic health promotion approach'. In 1997, The Jakarta Declaration aimed to increase health expectancy, by for example reducing health inequities and build social capital. The involvement of families and communities, and other strong partnerships like the private sector was important to promote health. The Fifth Global Conference on Health Promotion in Mexico, focused on bridging the equity gap, concluded that health promotion should be a fundamental component of public policies in all countries. The Bangkok Charter for Health Promotion in a

Globalised World, the focus was, among other, on increasing inequalities between countries. It has been difficult to identify appropriate actions for these problems, however the actions must include values of equity and empowerment for them to be regarded as health promoting actions (Green & Tones, 2010).

Schools as an arena in health promotion work related to mental health

According to Norwegian law, schools have a responsibility in the health promotion work related to students' mental health. The law states that all students have the right to an adequate physical and psychosocial environment that promotes health, wellbeing and learning (Kunnskapsdepartementet, 1998; Sosialdepartementet, 1993). To succeed with this work, collaboration between students and teachers in schools should be emphasised (M. Larsen, 2011).

The work method used should be both individually and environmentally oriented. Individually oriented work focus on increasing the knowledge in the students so that they can make healthy and safe choices on their own. Environmentally oriented work focus on creating a health-promoting environment in the class and at the school as a whole, for example through social relationships between student and teacher (Sosialdepartementet, 1993). Even though stated in the law, this kind of work is not included in the curriculum for students and the subject is not taught in teachers college. At the same time, teachers have reported that they feel insecure on how to approach students that are struggling (M. Larsen, 2011).

Health psychology

The field of health psychology focuses on how social and psychosocial context may affect human health and disease (O'Donohue, Benuto, & Woodward Tolle, 2013). Health Psychology was first defined in 1980 as "the aggregate of the specific educational, scientific, and professional contributions of the discipline of psychology to the promotion and maintenance of health, the prevention and treatment of illness, and the identification of etiologic and diagnostic correlates of health, illness, and related dysfunction" (De Ridder, 2015).

Further, De Ridder (2015) state that health psychology is to do with the understanding of how psychological factors may have an impact on health. Health psychology is distinguished from

clinical psychology and behavioural medicine as the focus is on physical health, (rather on mental health), and on the behavioural (rather than medical) aspect of health. Some argue that health behaviour is related to any type of behaviour performed who believes in himself that the performed activity is healthy. This kind of belief can be called a resource for health. Brudal (1993) outlines the importance of making use of such available resources within an individual, for example in rough times. An example of individuals, who makes use of their available resources for health, can be the dandelion children. These children despite poor terms, still manages to survive and thrive, and achieve grate things in life.

With this background in health, health promotion and health psychology, it was interesting and relevant to investigate the topic of the present thesis. The fact that the psychological health is an important aspect for positive health, underpins the importance of such research investigating possible effects on this relationship. Further, adolescence is often a period of many changes, and an increased understanding of the complexity of factors affecting mental health is important to be able to promote positive health. Further, as most adolescents go to school in Norway, schools are an appropriate arena for both studying this age group and for health promotion work.

Thesis structure

So far, the topic, aim and framework of the thesis have been presented. Next, the following section will address relevant concepts and clarify the theoretical anchoring. A literature review demonstrates what is already known about the topic. On the background of previous research, I then present the research questions of the current study. In the method section, there will be a short explanation to the scientific view and I try to place the study in a scientific paradigm. A presentation of the COPLETE trial, which my data sample stems from, is given. Following, the statistical analysis and measurements are presented. The results from the statistical analysis are presented, followed by the discussion section where the results are discussed in relation to the theoretical framework and the literature review. Study strengths and limitations are addressed. Suggestions for further research, and possible implications for work related to the field of health promotion and health psychology are given. At last, a conclusion rounds up with the main findings of the current study.

Concept Clarifications

Below, a clarification of the measurements used in this thesis will follow (anxiety and depressive symptoms, teacher support, and socioeconomic status). As the topic evolves around the school environment, a short presentation of schools as an arena in health promotion work is given.

Anxiety and depressive symptoms

It is common to separate the term psychological symptoms from the term psychological disorders. Psychological symptoms refer to problems that are difficult to deal with and may reduce life quality, however, not to the extent as in psychological disorders where specific diagnostic criteria are met (Folkehelseinstituttet, 2009). Psychological symptoms such as anxiety and depressive symptoms, may affect the feeling of well-being, learning abilities, and reduce social interaction.

Both anxiety and depressive symptoms are normal feelings to experience for a short period of time. If the symptoms persist over the long term and affect feelings, thoughts, and actions, they are no longer only symptoms, they may qualify as a disorder. If untreated, this could lead to depressive disorders such as major depressive disorder or clinical depression, which are serious mood disorders. Also, generalised anxiety disorder, panic disorder, and social anxiety disorder might emerge if symptoms are left untreated (National Institute of Mental Health, 2016).

Anxiety symptoms

In anxiety, the main feeling is insecurity, either related to an expected situation of fear or as a general feeling (Parker & Eyers, 2010). Anxiety related to fear is often accompanied by mental activation (e.g. fear of dying, getting angry, losing control) and physical activation like freezing, being startled, heart rate and blood pressure changes and increased vigilance (Rosen & Schulkin, 1998). These are both called normal adaptive anxiety. In contrast, pathological anxiety is when there is no real mental or physical hazard or when the reaction is not in proportion to the current threat. Normal adaptive anxiety is often experienced during change and when facing new things. For example in the transition from lower secondary school to upper secondary school (Tanti, Stukas, Halloran, & Foddy, 2011).

Depressive symptoms

Depressive symptoms relates to emotions like sadness, low self-esteem and poor motivation (Sletten & Bakken, 2016b). Feeling less joy in things that used to be fun and less energetic than usual might also occur. In addition, disturbed sleep patterns (sleeping less or more than usual), poor appetite and weight loss (in some cases increased appetite), making little effort and lacking initiative, as well as memory and concentration problems might be depressive symptoms (Parker & Eyers, 2010). To clarify, depressive symptoms are not the same as normal mood swings, or being sad for days and feeling low in energy or feeling blue over a breakup. These emotions are normal and usually not related to depressive symptoms (Holsen, 2009). However, if these emotions persist over a period of weeks or months and lead to isolation and difficulties coping with normal life (e.g. not wanting to go to school or work), there might be talk about depressive symptoms (Holsen, 2002, 2009).

The thesis' focus is on anxiety and depressive symptoms, and not severe depressive and anxiety disorders. Measurements report perceived anxiety and depressive symptoms during the past 14 days. Anxiety and depressive symptoms were assessed with a questionnaire regarding the following emotions and feelings in the past 14 days: «Have you been scared or anxious?», «Have you felt tense or at unease?», «Have you felt down and sad?», «Have you felt hopelessness about the future?», and «Do you worry much about things?».

Comorbidity

Comorbidity in anxiety and depressive symptoms means that these symptoms are present at the same time (Krüger, 2000). Anxiety and depressive symptoms frequently co-occur both concurrently and sequentially, and one often increases the risk of the other over time. The degree of comorbidity varies by age and developmental period, whereas anxiety is more prevalent during childhood, depressive symptoms increases during adolescence. Most studies of sequential comorbidity have focused on anxiety as the predictor and depression as the outcome, rather than the reverse. In general, evidence indicates that anxiety symptoms in childhood often precede the onset of depression in adolescence and young adulthood. This has been found particularly for girls, and may contribute to the increased risk of depression in females (Garber & Weersing, 2010). Comorbid anxiety and depression result in more severe

symptoms and treatment resistance compared to either anxiety or depressive symptoms alone (Melton, Croarkin, Strawn, & McClintock, 2016).

Anxiety and depressive symptoms in adolescence

As mentioned, adolescence is a period of heightened vulnerability for the onset of anxiety and depressive symptoms (McLaughlin & King, 2015; Murberg & Bru, 2009). Adolescence is the period in life between childhood and adulthood, but the definition of the adolescence period differs between cultures. There is however agreement that adolescence is a period with special health and developmental needs, a period to learn about emotions and social relationships (World Health Organization, 2017a).

The period has earlier been referred to as the "storm and stress" of adolescence including emotional turmoil and breach with parents. However, this view has changed, and theories suggest that adolescence is a period with many life-chances (Harter & Bosacki, 1999; Larson & Ham, 1993). Others argue that adolescence is a period that often involves the need for freedom, and that the brain is now further developed such that the world may be perceived differently from before (Milevsky, 2015).

As children grow older, it seems that they become less dependent on adult authority figures, such as their parents, for support. This could be due to biological, cognitive and psychological changes associated with the onset of puberty. At the same time, in this period of life there is often an increased emphasis on support from significant others, for example peers and an increased emphasis on the feeling of belonging. Some argue that the feeling of belonging to a certain group is more prevalent in early adolescence, whereas in late adolescence there is a shift towards achieving personal identity (Bornholt, 2000).

Recent research have focused on the role of social, genetic, neural and cognitive factors in the development of anxiety and depressive disorders in adolescence. Further, whether social stressors might interact with genetics causing a change in brain structure and function, which might cause vulnerability to anxiety and depressive symptoms have also been suggested (Casey et al., 2010).

During adolescence, perceptions of the physical environment, along with the social and economic characteristics of the household, are important factors in explaining patterns of development of depressed mood and anxiety (Smith et al., 2015). (Schubert, Clark, Van,

Collinson, & Baune, 2017), There has been a strong focus on the social context (Bakken et al., 2016; Bøe, Øverland, Lundervold, & Hysing, 2012; Dahl, Bergli, & Wel, 2014) and social support (Bakken, 2017) surrounding the human body. For example, that the adolescents feel that their teachers are supportive.

Research have found that adolescence who struggle with anxiety and depressive symptoms actually experience almost the same level if psychosocial dysfunction as those with a clinical diagnosis of depression (Gotlib et al. (1995) and Lewinsohn et al. (1995) in Holsen, 2012, p. 61). For those clinically depressed, these dysfunctions include difficulties in cognition, self-perceptions, inter-personal problems and coping skills. Adolescents experiencing depressive symptoms report dysfunctions like pessimistic cognitive style, negative body image, low self-esteem, and suicide-related behaviour (Gjerde & Westenberg (1998) and Kandel (1991) in Holsen, 2012, p. 61) and less social support (Lewunsohn et al. (1997) in Holsen, 2012).

Gender differences in anxiety and depressive symptoms

Holsen (2002) and Nilsen (2012) refer to research documenting that there are gender differences in depressive symptoms, with a higher prevalence in girls during early adolescent years. Nilsen (2012) refer to findings stating that girls in adolescence report two to three times more depressive symptoms compared to boys. Additional research shows that girls report more anxiety and depressive symptoms compared to boys in adolescence (Bakken, 2017; Folkehelseinstituttet, 2014, 2018; Holsen and Nolen in Holsen, 2009, p. 62). The more severe psychiatric disorders showed no gender differences (Statistisk Sentralbyrå, 2001). However more recent numbers show that girls seem to report more symptoms of psychiatric disorder compared to boys (Norgeshelsa statistikkbank, 2014).
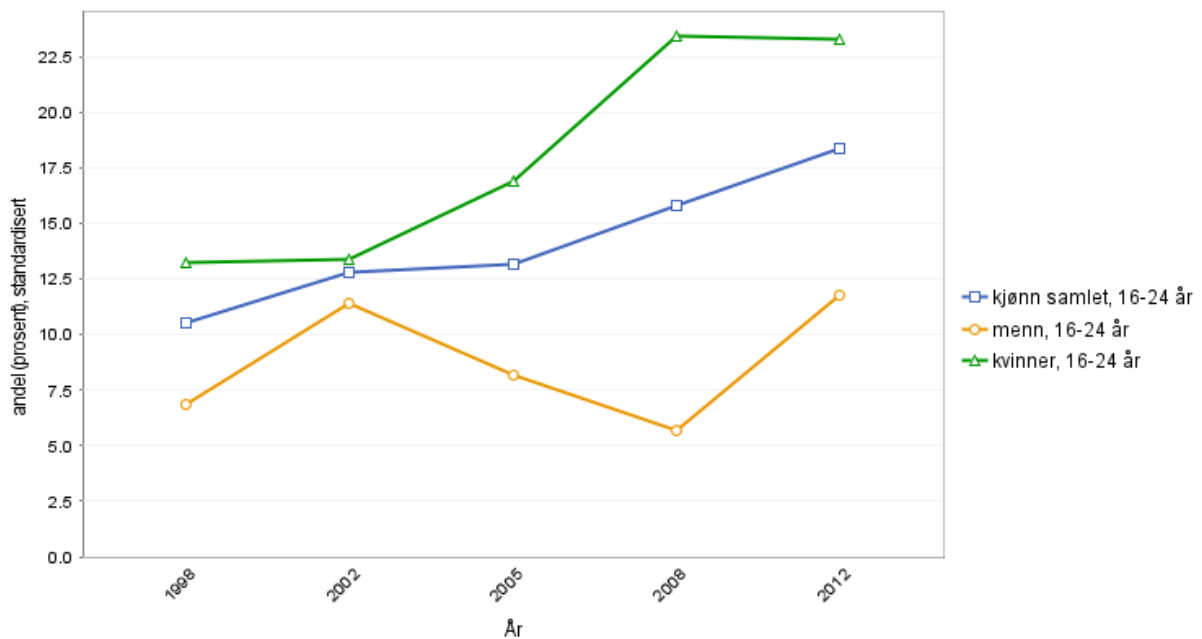
Figure 1 development of self-reported level of depressive symptoms in boys and girls aged 16-24 years from 1998-2012.

By inspecting figure 1, it is clear that the level of depressive symptoms increased in both genders during the period between the years 1998-2012. The level increased from approximately from 13-23 % in girls, and from 7-12% in boys aged 16-24 years (Norgeshelsa statistikkbank, 2014). This trend has continued in the following years, and the Ministry of Health reported twice as many girls to be bothered with anxiety and depressive symptoms compared to boys (Folkehelseinstituttet, 2014, 2018).

Gender difference is less prevalent in early adolescence. In pre-puberty, boys actually might experience more symptoms than girls (Nolen-Hoeksema, Girgus, & Steinberg, 1994) . After the age 13-14, girls consistently report more symptoms of anxiety and depression compared to boys, with a peak at age 15-18. Thereafter, the prevalence decreases and stabilises at age 21-23. In boys, the level of symptoms is more stable and decreases at age 18 until it stabilises at age 23 (Kandel in Holsen, 2009, p. 62).

The reasons for these gender differences in anxiety and depressive symptoms might be related to biological, psychological or social factors. Biological factors are related to hormonal changes in puberty which in combination with other factors might increase risk of developing anxiety and depressive symptoms. In addition, adolescence is a time filled with thoughts and expectations about becoming an adult. Some suggest that girls are prone to anxiety and

depressive symptoms due to them being more introvert (Nolen-Hoeksema et al., 1994). Examples of social factors are expectations from the surroundings regarding for example choice of education and lifestyle. The fact that girls are more open about their symptoms compared to boys, may also contribute to explain the gender difference in prevalence of anxiety and depressive symptoms. Boys seem to actually be less likely to recognise and report their symptoms (Campell in Holsen, 2009, p. 63). Nilsen (2012) suggest that the gender differences might be related to gender-linked roles, beliefs and expectations.

Other explanations could be a difference in brain development, and/or a difference in reaction to social stimuli. Research suggest that girls experience a greater intensity of both positive and negative emotions than boys do. Girls are also more likely to experience negative reactions to stressful interpersonal events, which in combination with increased intensity of emotions, place them in an increased risk of developing anxiety and depressive symptoms. In addition, girls are also more likely to talk openly about their emotions compared to boys (Frost, Hoyt, Chung, & Adam, 2015). Others argue that the adolescence period is especially difficult for girls due to an introverted self-focus in combination with pubertal changes, social norms and expectation pressure related to choice of career, lifestyle and appearance (Nolen-Hoeksema et al., 1994) . Some state that the increased prevalence of anxiety and depression in girls is related to a society norm associating depression in boys with weakness. Consequently, boys may be less likely to recognize and report anxiety and depressive symptoms (Campell et al. in Holsen, 2012, p. 63).

The next part of the thesis will clarify the concepts of social support, teacher support and socioeconomic status which all are a part of the environment surrounding the adolescents.

Social support

Social support is defined as the relationships that have an impact on functioning, and often includes support from individuals or institutions (World Health Organization, 2007). Reid cited in World Health Organization (2007), refer to four kinds of social support: instrumental support, informational support, affiliative support, and emotional support. The former two relate to structural conditions like support from the health services or receiving health related information. The latter two, relate to social conditions like socialising with people with the same interests (affiliative support), or emotional support from close friends, family or professionals when needed.

WHO state that social support in forms of caring and meaningful relationships is important for positive developmental outcomes (World Health Organization, 2007). Having strong connection to significant others, will provide a secure base for psychological and social development (Morgan, Ziglio, & Davies, 2010; Rønning & Starrin, 2009).

In this study, social support was measured by asking how students perceive the connection with their teachers.

Social strain

"Social strain is the negative side of social exchanges". It has been defined as how individuals perceive their network in the means of critical, irritating and unreliable. (Walen & Lachman, 2000), or as actions performed by others causing feeling of distress like resentment and/or sadness (Rock in Walen and Lachman 2000).

It has been argued that social support may buffer the effect of social strain (Walen & Lachman, 2000). In times when parental support may be weak, like in adolescence, other sources of support may then become important. For example peers and/or teachers (Tian, Tian, & Huebner, 2016). According to Håkonsen (2009) and Eriksson's theory on psychosocial stages, the fifth stage is when adolescents rely less on support from their parents, however the need for social support and affiliation is still present. Schools might be an important arena to fulfil these needs and teachers might play an important role.

Teacher support

In the current thesis, it was interesting to investigate whether teacher support as a measure of social support, could act as such buffer in the relationship between socioeconomic status and the development of anxiety and depressive symptoms.

Teacher support refers to the degree to which students perceive their teacher to be someone who provide opportunities for choice and decision making with respect to learning and school life (Jia et al., 2009; Yu et al., 2016). Characteristics of supportive teachers are that they adapt to adolescents' perspectives, are welcoming, and that they incorporate adolescents' opinions, interests and concerns into the learning activities (Reeve, 2009).

Teachers with these qualities, may provide a sense of security and a buffering effect on developmental risks by helping adolescents relate to peers, regulate emotions, and utilize coping strategies (Marcus & Sanders-Reio, 2001).

In this thesis, teacher support was assessed by self-reporting feelings of trust, autonomy and accept from their teachers. Participants responded to items such as "My teachers trust me to do well in a subject", "My teachers give me choices", "I feel my teachers understand me", and "My teachers cares about me".

Socioeconomic status

"Socioeconomic status is the social standing or class of an individual or group. It is often measured as a combination of education, income and occupation. Examinations of socioeconomic status often reveal inequities in access to resources, plus issues related to privilege, power and control" (American Psychology Association, 2018). The three measures of socioeconomic status are interrelated, but not fully overlapping variables. Researchers use one or several indicators to measure socioeconomic status. The fact that associations between these measures and socioeconomic status and health are found, suggest that there is a broader underlying mechanism, related to social stratification or social ordering (Adler et al., 1994).

Youths are however, rarely asked to report their parents' level of income. This is because many do not know how much their parents earn (Ensminger in Bakken et al., 2016, p. 22). Some argue that adolescents are more likely to know what kind of job their parents have and use this as measurement of socioeconomic status (Bakken (2007) in Bakken et al., 2016, p. 22). However, this is not supported by found by others as adolescents often give nonspecific answers related to parental occupation (research at HEMIL conf. supervisor).

It is well documented that low socioeconomic status is related to negative psychological health outcomes, such as anxiety and depression and symptoms of these. Opposite, higher levels of socioeconomic status relates to more positive psychological outcomes such as optimism, self-esteem and perceived control (American Psychology Association, 2018). Other effects of severe poverty on health may be related to poor nutrition, crowded and unsanitary living conditions, and inadequate medical care (Adler et al., 1994). Examples are; cardiovascular disorders, cancer, muscle and skeletal disorder, rheumatic ailments. Inequalities in sick leave and disability insurance are also often prevalent (Sosial- og helsedirektoratet, 2005). Some

types of illnesses like breast cancer and prostate cancer may have a different pattern of a higher prevalence in higher socioeconomic status families. Further, rare disease are difficult to place on the social ladder. In general, however, health problems are more prevalent in families with low socioeconomic status (Sosial- og helsedirektoratet, 2005).

Examples of this were demonstrated, among others, by (Bøe, 2013); Bøe (2015); (Bøe et al., 2012) who studied socioeconomic status and the effect on development of disease and health. The studies found that socioeconomic status affected psychological development in youth, and that it had consequences that continued into adulthood.

Bakken et al. (2016) explain the relationship between socioeconomic status and mental health with a materialistic model that suggests that health is affected by a more or less favourable environment. Another explanation, the psychosocial model, has a stronger focus on the social context surrounding the human being. Rønning and Starrin (2009) state that within societies where the citizens have approximately similar socioeconomic status, the residents are less affected by illness and disease.

In this thesis, socioeconomic status measured self-reported perceived family income and perceived family education level. I believe is a more adequate measure

Theory

There are no theories that exactly address the relationship between teacher support and anxiety and depressive symptoms. Therefore, theories that could contribute towards an understanding of this relationship were chosen. The theoretical framework consist of three theories; social capital theory, health assets theory and self-determination theory.

Bordieu's social capital theory was interesting to include as it addresses how positive social relationships may buffer against negative circumstances in the environment, which fits well with the research question of the thesis. For example, a positive student teacher relationship may buffer against anxiety and depressive symptoms. The health asset model is about defining resources that may contribute to stronger health and reduced inequities in health. In relation to the thesis, an asset could be a good social relationship between student and teacher regardless of social class. Third, the self-determination theory was included as it address factors like

autonomy and motivation, which are important factors in relation to anxiety and depression in a school based setting.

Bourdieu's social capital theory

According to Bourdieu (1986), capital can be either human, cultural or social. Human capital relates to education, subjective social status, and household income, while social capital relates to social integration, formal and informal links with others, or both in combination.

Almedom (2005) defines social capital as all positive relationships including families and neighbours that serve as buffers to the negative influences within one's immediate environment." It includes the institutions, relationships, networks, trust, reciprocity and norms that shape the quality and quantity of a society's social interactions. Starrin (2009) argue that social capital is not just the sum of these relationships and institutions, but also the glue that holds them together.

Social capital is to do with the social resources available in life, and are important for developing positive health and welfare (Rønning & Starrin, 2009). The social resources might be just as important for positive health as other resources like money, physical capital and education (human capital). For the weakest group of people in society with poor economy and human capital however, social capital might be the most important resource to emphasize to help individuals to increase their empowerment and take control over their own situation (Rønning & Starrin, 2009).

Social capital is often used as an umbrella term embracing social cohesion, social support, social integration and/or participation, among several other social determinants of health in general and mental health in particular (Almedom, 2005). Around year 2000, there was a shift of focus from treatment to prevention in health care, and social support has emerged as health promoting in mental health and in general (Almedom, 2005). Social cohesion is critical for societies to prosper economically, to be safe, and for development to be sustainable. Evidence show that people with stronger networks are more happy and healthy, and that increased social contact and support gives more confidence, and decreases isolation and depression (Starrin, 2009).

The literature often refers to two forms of social capital; bonding and bridging. that are both beneficial for mental health (Almedom, 2005). Bonding is the type that occurs between individuals within a group, and bridging take place between groups (Rønning & Starrin, 2009).

Bridging and bonding may operate at micro levels of individuals, their families and social networks, or at macro levels of formal or informal networks that individuals or groups are a part of (Almedom, 2005).

On a society level, it seems like those areas with individuals with the same socioeconomic status, are more united and trust each other more compared to areas with larger inequalities in health (Rønning & Starrin, 2009).

Social capital has been defined as a buffer against negative influences in life (Stevenson (1998) in Almedom (2005) p.954). Others suggest that social capital might also operate as a health asset for stronger health (Morgan et al., 2010).

Health assets

A "health asset" is a factor that produces stronger health. Morgan et al. (2010) define health asset as any factor (or resource) that, enhances the ability of individuals, groups, communities, populations, social systems and/or institutions to maintain and sustain health and wellbeing and to help reduce health inequalities.

Health assets can be either biological (e.g. cardiorespiratory fitness), subjective (positive emotions, optimism, sense of meaning, hope), or functional (such as close social networks, a stable marriage, meaningful work). (Seligman et al., 2013). In addition, health assets can operate on different levels; individual level: social competence, self-esteem, sense of purpose, community level: supportive networks, community cohesion, harmony, and organisational/institutional level: environmental resources, employment security, democracy.

The health asset model presented by Morgan et al. (2010) help understand the causes and mechanisms of inequities in health. The theory draws upon the theory of salutogenesis and the creation of health and not prevention of disease. They recommend asset mapping for effective recognition of solutions that builds on the existing capabilities and capacities. Resilience has been defined as one such important asset, especially for those growing up in difficult circumstances. For example, resilient adolescents that are able to utilise skills that helps them to rebound from setbacks and continue a productive life.

Seligman et al. (2013) have investigated other positive assets such as optimism, zest, and a sense of purpose in life, in relation to whether and how they may promote health in people with risk factors for developing for example anxiety and depression.

These assets may be investigated from different point of views; either as indicators of positive health, predictors of positive health or as outcomes of positive health. In research, it is therefore important to keep the different points of view distinct to avoid confounding between them (Seligman et al., 2013).

The asset approach stems from The Positive Health Initiative. This initiative was inspired by positive psychology, and challenged the belief that mental health was merely the absence of mental illness. In positive psychology, mental health is regarded as real, positive emotions, engagement, good relationships, meaning, and accomplishment (PERMA). Still, there is no guarantee that these conditions will emerge in the absence of mental illness, or that they will obviate by the presence of mental illness. According to Seligman et al. (2013), Positive Health relates to illness prevention, health promotion and wellness.

Even though this thesis does not address mental illness, I think that the health asset approach is useful in relation to the development of anxiety and depressive symptoms in adolescence. Positive psychologists believe that the best ways to address psychological problems are to identify and leverage on individual strengths. By emphasising this to students and teachers, schools might operate as an arena where adolescents can learn to exploit their health assets to cope in difficult times.

Seligman et al. (2013) state that to develop Positive Health, one must identify what are the likely health assets for that specific individual. For example, in the combat of development of anxiety and depressive symptoms in a school setting, the health assets might be subjective or functional (social). Subjective health assets might be positive emotions, life satisfaction, optimism, meaning, and purpose. Functional or social health assets might be having close friends and family members, a stable marriage, meaningful work, and participation in a social community. Maybe teacher support, as measured in the present study, can act as a functional health asset.

Self-determination theory

Teachers may play an important part in adolescents' lives. There is empirical support for the protective effect of teacher support on adolescent anxiety and depression (LaRusso et al., 2008; Way, Reddy, & Rhodes, 2007)…+++. One theory to how teachers may affect anxiety and depressive symptoms, is the Self-Determination Theory (SDT). The theory is related to motivation and autonomy, and to what extent teachers are able to engage their students. I find this theory interesting and relevant, as motivation and autonomy are closely related to anxiety and depressive symptoms in adolescence (motivasjon og trivsel).

In Self-Determination Theory, motivation is explained as either intrinsic or extrinsic. Intrinsic motivation is related to actions performed because they are interesting or enjoyable to do, while extrinsic motivation relates to actions performed because they lead to a specific outcome. However, the quality of the outcome depends on what type of motivation that caused the actions to take place (Ryan & Deci, 2000a).

To specify factors in social contexts that produce variability in intrinsic motivation, Cognitive Evaluation Theory (Bandura, Barbaranelli, Caprara, & Pastorelli) was presented by Deci and Ryan (1985). Ryan and Deci (2000b) showed how level of autonomy might be related to motivation in adolescence, which in turn is related to anxiety and depression. Optimal challenges, positive feedback, and freedom from demeaning evaluations are predicted factors to facilitate intrinsic motivation as they give a greater sense of autonomy.

Conversely, extrinsic factors can weaken intrinsic motivation. For example, tangible rewards, threats, deadlines, directives and competition pressure diminish intrinsic motivation, because according to CET, people perceive them as controlling factors.

Even thought, most activities people do are extrinsically motivated. For example, after early childhood intrinsic motivation is increasingly influences by social demands and roles of others. In schools, it seems like intrinsic motivation becomes weaker with each advancing grade (Ryan & Deci, 2000a).

In adolescence, when there is a decrease in parental reliance, and an increase in interactions with teachers and peers, it could be beneficial to address the importance of the influence that teachers may have on their students.

In adolescence, there is also an enhanced desire for self-expression, behavioural independence and psychological autonomy.

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Ryan and Deci (2000b) suggest that people are motivated by three basic psychological needs – autonomy, competence and relatedness, which in turn will help maintain psychological health. Individuals will be more intrinsically motivated to participate and engage in activities if basic psychological needs for autonomy, competence and relatedness are satisfied.

In a school context, this could relate to adolescents feeling less anxiety and depressive symptoms if teacher autonomy support met the adolescent's basic need for autonomy. An environment that neglect these basic needs can result in adverse developmental outcomes such as socioemotional deficits (Ryan & Deci, 2000b). Studies have found that autonomy supportive teachers, in contrast to controlling, increase intrinsic motivation, curiosity and the desire for challenge in the students (Deci, Nezlek, & Sheinman (1981), Flink, Boggiano, & Barrett (1990), Ryan & Grolnick (1986) in Ryan & Deci, 2000b, p. 71). Further, increased motivation and autonomy in student are associated with a feeling of well-being (Cesar, Phillip, & Oscar, 2015).

Literature review

A literature review was conducted to obtain an analytical overview of the relevant literature published on the topic.

Each theme was reviewed separately before finally bringing them all together. First, prevalence of anxiety and depressive symptoms is presented, followed by a review of the literature on teacher support in relation to anxiety and depressive symptoms. The impact of social networks and socioeconomic status on this relationship is presented. Details about the search for relevant material, and the process of selection and omission are outlined in the search strategy.

Search strategy

Electronic bibliography databases (Psych Info, Web of Science, Medline, Pub Med, Oria and Google Scholar) were initially searched for the phrases: '*teacher-student relationship'* and '*mental health*'. The search resulted in approximately 300.000 items.

The search was re-run by replacing the search term 'mental health' with other synonyms like 'anxiety', 'depressive symptoms', and 'depressed mood'.

The search was then re-run by adding 'adolescence' to the search string. The appearance of search terms in titles, abstracts, key words and/or in the text was checked in work published

during the past 10 years. However, some older references were included as they added knowledge and understanding to the subject. The items found to be of specific relevance to anxiety and depressive symptoms in relation to teacher support, were reviewed by going through titles and abstracts. English or Norwegian publications were included. Relevant items were also found from the reference lists from the initial relevant items.

Synonyms and combinations of search terms were as follows:

-"Teacher support".

AND

-"Psychological health" or "mental health" or "depression" or "depressive disorder" or "depressive symptoms" or "anxiety" or "anxious".

AND

-"Youth" or "adolescent*" or "adolescence" or "teens" or "teenagers" or "young" or "upper secondary student" or "highschool student".

Finally, the combination that produced the most relevant search results, were found:

-"Teacher support".

AND

- "Depressive symptoms" and/or "anxiety".

AND

- "Adolescence

The databases gave the following findings:

Web of science: 14 items. 6 seemed relevant as the search terms were included in the title.

Google scholar: 1750 items

Psych info (ovid): 119 items

Medline (ovid): 4 items

Pub med: 110 items, however only 3 items were relevant. These were also found in other databases.

Oria: 25 989 items

The search was performed again in November 2017, and additional items were found. A total of 9 papers regarding anxiety- and depressive symptoms in adolescence in relation to teacher support, were examined in detail.

Anxiety and depressive symptoms in adolescence

The literature show an increased prevalence of anxiety and depressive symptoms in adolescence during the past 30-years from 12% to 19%, especially among young girls (Bakken, 2017; Sletten & Bakken, 2016b). Studies have found that the increase has been greatest in the past decade. During the period from 2006 to 2015 alone, the extent of girls aged 14-17 in Oslo, with high levels of anxiety and depressive symptoms, increased from 17% to 26 %. The latest Ungdata report from 2017 (Bakken) states that 1 out of 4 girls reported depressive symptoms like being quite a lot bothered with/very much bothered with "worrying about things" and "everything is a hassle". For boys, the level has been stable since 2006, after an increase from 9% to 11% in the period 1996 to 2006 (Bakken, 2017). Then, the proportion of boys reporting no anxiety and/or no depressive symptoms increased from 8% to 13 % (Sletten & Bakken, 2016b). However, the latest Ungdat-report state that the prevalence among boys are now again rising (Bakken, 2017).

Ungdata is a national study conducted in 439.200 Norwegian adolescence in secondary- and upper-secondary schools from the year 2010-2017. The study aim is to investigate how the adolescents feel and what they do in their spare time. The latest report from 2017 give a national overview from 2015-2017. To investigate the experience of depressive symptoms, the adolescents reported their feelings and emotions during the last week. This is the same method as in many other self-reporting surveys. The measurements were: «everything is a hassle», «sleeping problems», «felt unhappy, sad or depressed», «felt hopelessness with regads to the future», «felt tense», «worry a lot about things». The alternatives were: «Not bothered at all», «a little bit bothered», «bothered quite a lot» and «very much bothered». In this study, adolescents reporting being bothered quite a lot or very much bothered, were defined as experiencing a high level of depressive symptoms.

In early research in the 1950-1960's, there was disagreement whether children and adolescents actually could experience emotions like depression. This was due to findings that the prevalence of depression was lower in children compared to adults. As the research evolved, the discussion turned more to whether the manifestation of depression differed between adults and children. Some believed that depression was a result of anger and hostility in individuals with difficulties expressing these emotions, resulting in self-blame, frustration and resentment. Depressing such emotions could manifest as hopelessness, worthlessness and self-deprecation. Contradicting, those researchers who believed that it was possible for children and adolescents to experience depressive emotions, reported findings from studies of infants and young children. They found that children, who had been taken away from their mothers and placed in institutional care, showed signs of depressive symptoms such as appearing sad and apprehensive, withdrawing socially and a lack of appetite (Powell, Ocean, & Stanick, 2017).

Much research have been conducted in this field since the 1950-1960's, and now it is well established that anxiety and depressive symptoms are very much possible to experience in both childhood and adolescence (Street & Brandyn, 2011). Now, the research has moved on to investigate what cause the prevalence to increase in adolescence, and what makes girls more disposed. Biological, cognitive and social theories exist, and this thesis will further elaborate on the social aspect. The following section address research on socioeconomic status in relation to anxiety and depressive symptoms.

Socio-economic status in relation to anxiety and depressive symptoms

As mentioned earlier, socioeconomic status relates to development of health and disease. More specifically, poor living conditions and low socioeconomic status may be associated with anxiety and depressive symptoms among adolescents (Bøe, 2013, 2015; Evans, 2004; Undheim & Sund, 2005).

In the search for what causes the effect between socioeconomic status and the development of anxiety and depressive symptoms in adolescence, factors related to parental and family environmental factors are suggested. Bakken et al. (2016) found that the relationship between lower socioeconomic status and higher levels of anxiety and depressive symptoms was mediated through parental and family environmental factors (Bakken et al., 2016). These are results from the Ungdata-study, which is a large and broad spectre study conducted over several years investigating the life as Norwegian youths growing up under different socioeconomic

conditions. Overall, the study included 117.607 adolescents of which 43.600 were upper secondary students. To measure socioeconomic status Bakken et al. (2016) use dimensions of parental education level, amount of books in the home, and the level of affluence in the family.

Holmboe (2006) confirms this finding of a correlation between socioeconomic level and anxiety and depressive symptoms. The level of symptoms declined with increasing income and rising parental education level, meaning that children from families with higher socioeconomic status experienced less anxiety and depressive symptoms. This study was conducted in Norway and included 16.480 schoolchildren aged from 8-13 years. Socioeconomic status was determined by measuring the parental education level and household income.

A Swedish study found supportive evidence, that low socioeconomic status correlated with higher level of anxiety and depressive symptoms in adolescence, particularly in girls (Wirback et al., 2014). This study reported findings from 2622 adolescents with a mean age of 12. Parental education and occupation were measurements of socioeconomic status.

Others have found that prolonged poverty is related to more severe mental health problems, but improvements in income may lead to improved mental health (Mcleod and Strohschein in Bøe, 2013).

Social support in relation to anxiety and depressive symptoms

As mentioned, the social environment may affect health and the development of anxiety and depressive symptoms in adolescence (Bakken et al., 2016).

A study investigating the effect of support from parents, teachers and friends on depressive symptoms in adolescents aged 15-18, found that girls reported more support from friends compared to boys, and boys reported more support from their fathers compared with girls. No gender disparities were found in the support from mothers and teachers (Colarossi & Eccles, 2003). Support from mothers, teachers and friends turned out to have a significant negative effect on depressive symptoms, of which more support was related to fewer depressive symptoms. Colarossi and Eccles (2003) further suggest that social support has been found to moderate the effects of negative life events related to stress. For example, students that were exposed to high levels of stress, but at the same time experienced high levels of perceived social support, might be more likely to be protected against the devastating effect of the negative life events. The author states that the previous research show inconsistent findings, and that the

studies have mainly focused on middle childhood or young adolescence. This receives support in a document by Folkehelseinstituttet (2009) where it is stated that the risk of developing mental difficulties increases when multiple stressors occur simultaneously, and when combined with little social support and vulnerability. Further, it is argued that it is the environmental factors that have the greatest impact on the occurrence of mental difficulties like anxiety and depressive symptoms among children and adolescents, while genetic factors have a stronger impact on the risk of developing more serious and chronic mental disorders (Folkehelseinstituttet, 2009).

Teacher support in relation to anxiety and depressive symptoms

Studies investigating the impact of teacher support on the level of anxiety and depressive symptoms are largely unambiguous. Findings suggest that a positive student-teacher relationship are associated with reduced level of anxiety and depressive symptoms in adolescence (Colarossi & Eccles, 2003; Krane, Karlsson, et al., 2016; Krane, Ness, et al., 2016; LaRusso et al., 2008; Murberg & Bru, 2009; Wang et al., 2013; Way et al., 2007; Yu et al., 2016).

Wang et al. (2013), LaRusso et al. (2008) and Colarossi and Eccles (2003) examined the impact of teacher-student relationship on depressive symptoms in adolescence at age 13-18, 14-18 and 15-18 in a U.S. school setting. Wang et al. (2013) LaRusso et al. (2008) and found that a positive relationship between teacher and student protected against depressive symptoms. In contrast, Colarossi and Eccles (2003) who used the same measurements as in the present study found that teacher support did not protect against depressive symptoms. These studies measured self-reported levels of depressive symptoms and teacher support, except Wang et al. (2013) who measured teacher support rated by teachers and not the students. Even though LaRusso et al. (2008) refer to depressive symptoms in their study, the definition of experiencing such symptoms was based on questions like "during the past 12 months, did you ever seriously consider attempting suicide?", and "during the past 12 months, did you ever feel so sad or hopeless for two weeks or more in a row that you stopped doing your usual activities?" I find that these questions assess something more severe than depressive symptoms, more in the direction of symptoms of a clinical diagnosis of depression. These studies are from the U.S. where the school system is different from Norway, and the age spans differ from the present study. Thus, it is not possible to directly compare findings to the present study.

De Wit et al. (2011) found that Canadian students reported less support from teachers after the transition to upper secondary school and that this was associated with increased depressive symptoms in the age group 12-16. The authors found it surprising that less support from teachers was reported at the same time as school demands increased. The biggest change in perceived teacher support was found in boys (De Wit et al., 2011). It is possible that the decline in feelings of social support after the transition to upper secondary school, is due to increased vulnerability in students. The new environment, larger schools and instructions from several teachers might not satisfy basic psychological needs of greater autonomy, more support and acceptance from teachers and closer relationships with peers (Eccles et al., 1993; Yu et al., 2016). When basic psychological needs like these are not met this can, affect school engagement, motivation and performance, which can result in maladjustment and development of anxiety and depressive symptoms (Yu et al., 2016). Thus, a match between students' needs and school resources is important. Overall, identification of such mechanisms is essential in order to best guide the creation of preventive programmes and targeted interventions for reducing the risk of developing adolescent anxiety and depressive symptoms.

Murberg and Bru (2009) found a positive association between negative life events and depressive symptoms in Norwegian students aged 16-18. Perceived teacher support was found to buffer against negative life events leading to less symptoms of depression. Negative life events could be, for example, parents getting divorced, own illness or illness of family members or friends, an unhappy love affair, harassment.

A qualitative study highlighted what Norwegian students (mean age 17,9) thought was important in developing a good teacher-student relationship to reduce the level of anxiety and depression (Krane, Ness, et al., 2016). Here it became clear that the students thought this was a shared responsibility for both pupils and teachers. They believed that communication could solve problems as well as increase the bond with each other. It was also important that the teacher adapted to students' academic levels and personal needs. Respecting the students' views and opinions has also been reported as important qualities (LaRusso et al., 2008). Other teacher qualities found to promote positive relationships are empathy, warmth, a supportive attitude and non-authoritative approach (Deci & Ryan, 1985; Helsedirektoratet, 2013; Ryan & Deci, 2000a, 2000b).

To sum up, the literature shows an association between teacher support and the development of anxiety and depressive symptoms. It seems that girls more often report anxiety and depressive

symptoms than boys, and that adolescents from families with a lower socioeconomic status are more prone to develop these symptoms. .

Research hypothesis

Previous research has investigated the relationship between socioeconomic status and anxiety and depressive symptoms in adolescence. However, there is little research investigating how teacher support may affect this relationship in relation to socioeconomic status in an upper secondary school setting. The aim of the current study was therefore to shed light on this area of research.

Based on previous research I was able to make the following hypothesis:

1. *There will be gender differences in percent and mean levels of anxiety and depressive symptoms.*

2. *There will be gender differences in percent and mean levels of perceived teacher support.*

3. *There will be a negative correlation between socioeconomic status and the level of anxiety and depressive symptoms.*

4. *There will be a negative correlation between anxiety and depressive symptoms, and teacher support.*

Furthermore, I explored if:

5. *Teacher support mediates the relationship between socioeconomic status and anxiety and depressive symptoms.*

Method

In the following section, the thesis' procedure, measurements, statistical analysis and ethical considerations are addressed both in general and thereafter in relation to the current thesis.

Philosophical worldviews

The health challenges in today's society are of complex nature, and the most adequate way to address this and provide the population with adequate support at all times, is constantly changing. To ensure that challenges are met in a sound and appropriate way, there is now certain demands related to that knowledge must be based on experience, theory and research based knowledge (Nortvedt, Jamtvedt, Graverholt and Reinar in Drageset & Ellingsen, 2009, p. 100).

The concept worldview is often referred to as paradigms, epistemologies or ontologies and are commonly divided into four; postpositivism, constructivism, advocacy/participatory, and pragmatism (Creswell, 2009). The chosen worldview, will often lead to the use of either qualitative, quantitative or mixed method approach.

Scientific paradigms

A paradigm is a perspective based on a set of assumptions, concepts, and values that a community or a group of researchers hold. Further, a paradigm is as a basic set of beliefs that guide action in the researchers' work (Creswell, 2014).

Postpositivism dates back to the 1900th century and is often referred to as natural science, where the researcher aim to unify the observations that has been systematically collected and give an explanation to the observed phenomenon (Bjørndal & Hofoss, 2004). It is a further development of the positivistic view, and thus challenging the belief of finding absolute truth. Typical for postpositivists is that they study cause and effect relationship, for example in experiments, and they often make use of hypothesis and research questions. In positivism, knowledge is obtained through careful observations and measurements. If observations are countable, the view is positivistic.

Others may hold a constuctivistic worldview. This is typically used in qualitative research, and the goal is to illuminate on the participants' own views on what is being studied. The questions are broad and open and the participants discuss with others and with the researchers listening carefully. Constructivistic researchers often address the interaction between individuals and the settings in which they live and work. This contributes with an understanding of the historical and cultural context that the participants live in, in addition to society norms (Creswell, 2009). Contradicting to postpositivism, in this type of research, it is unavoidable that the researchers own background influences the interpretation of the findings. The researchers' main task is to

interpret the meanings that the participants have about a certain topic, and then develop a theory or pattern based on these. This is contradicting the postpositivism approach, where the researchers start off with theory and then formulate research questions or hypothesis and enlighten these in relation to the theory based on the study results.

The advocacy and participatory worldview arose from the postpositivsm in the 1980s and 1990s from researchers aiming to help marginalised people in the society. This worldview is typically used in qualitative research, but can also be a foundation in quantitative methods as well (Creswell, 2009). This type of approach is closely intertwined with politics and political agenda, and at the end of a study, the researchers will put forward a specific agenda for action with the aim to be life changing for the participants in the study. Examples of issues typically addressed by this approach is empowerment and inequality. The participants themselves are often included in the research process, and may help for example with questionnaire design, data collection and the information analysis. By including the participants, they are given a voice, and their awareness about the specific topic that is being studied, increases. Further, this might motivate for change to improve their lives.

The pragmatic worldview often arises out of actions, situations, and consequences, and not from previous conditions like in postpositivism. The approach is concerned with understanding a problem and finding solutions, and focus less on the methods used. An example is the mixed method approach where the researcher may use both qualitative and quantitative approaches in their research (Creswell, 2009). However, there must be a rationale for the combination of methods and the researcher need to establish why they used this approach. Some have argued that pragmatists are less interested in reality and laws of nature, and more concerned with how the subject can be changed (Rorty in Creswell, 2009, p. 11).

Method

The method includes plans and procedures involved in the research project. This could be thoughts and assumptions or a detailed overview of data collection and analysis procedure. Decisions about appropriate design must be made with background in the researchers' scientific worldview, the nature of the research problem, the researchers' personal experiences, and the audience of the study.

The definition of method is "a procedure, a means of solving problems and developing new knowledge. Any means that serves this purpose belongs to the arsenal of methods" (Hellevik, 1992). Further, an appropriate method may contribute with science and new knowledge, however «Science is more than a body of knowledge; it is a way of thinking» (Carl Sagan in Bjørndal & Hofoss, 2004, p. 18). This citation reflects that the methodology closely relates to researchers' scientific view. Creswell (2009) state that this involves an interaction between intersection of philosophy, strategies of inquiry, and specific methods. Further he state that it is important that the researcher is clear about his or her point of view in relation to this. He recommends including a statement of the philosophical worldview of the study, a definition of basic considerations of that the worldview and how the worldview shaped the research approach.

The research process is about collecting documentation in an organised and systematic manner. It is important that the researchers' personal and social circumstances do not influence the process or outcome (universalism). Further, being able to think in a logical, critical and consistent manner is a prerequisite when conducting research (systematic scepticism). Working systematically is especially important when working with data collection. This way of thinking is in line with the paradigm related to scientific scepticism (Bjørndal & Hofoss, 2004).

The types of design are qualitative, quantitative and mixed method. Qualitative and quantitative designs are not to be considered as two opposites, but rather as representing the ends on a continuum (Newman and Benz in Creswell, 2009, p. 3). Mixed method incorporates elements from both designs, and is therefore placed in the middle on the continuum. Historically, for most of the twentieth century, the quantitative paradigm was dominant, while during the 1980s, the qualitative paradigm emerged as an alternative. Finally, we have the mixed method approach, which dates back to the late 1950s.

Quantitative method is an important contributor for research-based knowledge as it is especially designed for survey use, investigation of correlations, determination of cause and effect relationships, and to determine the effect of interventions (Drageset & Ellingsen, 2009). The findings from this type of design should be generalizable and possible to replicate. Typically, a quantitative study has a deductive approach and the written report should hold a certain structure with introduction, literature and theory, method, results, and discussion. In quantitative research, numbers and closed-ended questions are used, rather than words and open-ended questions like in qualitative research. Further, qualitative research aim to explore

and understand the meanings and complexity related to a social or human problem. The method use an inductive approach, with data typically collected in the participants' environment and interpretations of date performed by the researcher. The written report is often flexible in structure.

As mentioned, the mixed method approach incorporates both the quantitative and qualitative approaches. The overall strength of this kind of study,is greater than methods are used in research separately (Creswell and Plano Clark in Creswell, 2009, p. 4).

Scientific view and method in the current study

The aim of the current study was to investigate the relationship between socioeconomic status and anxiety and depressive symptoms in adolescence, in relation through perceived teacher support.

The research questions in the present study seeks to investigate correlations thus, a postpositivistic oriented approach were ideal. The measurements and the observations were countable which fits well with this worldview. Conversely, if the aim were to explore the students' perspectives on the teacher student relationship, a pragmatic worldview would be appropriate.

The postpositivstic worldview, together with the aims of the study, a quantitative methodology was concluded as the appropriate approach for the present study. This type of method is common in research making use of surveys and the investigation of correlations. In addition, there was a wish to make generalizations, which further support the use of a quantitative methodology. Further support for the chosen method, is related to the possibility of sources of errors in a qualitative approach. It is for example plausible to think that the adolescents would feel uncomfortable in an interview setting being asked about anxiety and depressive symptoms, resulting in the adolescents being afraid to be honest. In total, a quantitative method was considered the most appropriate method to use when investigating the level of anxiety and depressive symptoms in adolescents related to socioeconomic status and teacher support.

Deductive or inductive approach

Natural science often uses an inductive or a deductive approach. Inductive means that the researcher makes certain observations and moves on to the hypothesis and theories. The deductive approach is when the researcher starts with the theory and hypothesis and moves on to expectations and verification/falsification of the hypothesis (Bjørndal & Hofoss, 2004). The inductive approach is often used in qualitative research and the deductive approach is often used in quantitative research (Creswell, 2009).

In the current study, I started up with theories and formulation of research questions. After data analysis, the research questions were illuminated in relation to the theories. This is in compliance with a deductive approach.

Procedure and participants

The COMPLETE trial

The data used in the current study was obtained from the COMPLETE study – a school based intervention project to increase completion of upper secondary school in Norway. COMPLETE is an ongoing three-armed cluster randomised controlled trial (T. Larsen et al., 2018). "The interventions aim to improve psychosocial learning environments and subsequently school achievements and decrease drop-out and absence" (T. Larsen et al., 2018, p. 1).

The study trial started in August 2016 and will end in June 2019. The study follows two cohorts from the start of upper secondary school up to graduation or until completion of second grade. The aim of the COMPLETE study is to determine the effectiveness of the Dream School Program (DSP) and the Mental Health Support Team (MHST) in adolescents in upper secondary school with respect to the primary outcomes of completion/drop-out, attendance, school grades, and mental health. The COMPLETE study covers a range of themes.

The current study uses data from the COMPLETE study, regarding anxiety and depressive symptoms in students, perceived teacher-student relationships, perceived family income and parental education level. The data reflects one specific period in time, spring 2017, making it a cross sectional study.

Cross sectional study

A cross-sectional study is a type of observational design that analyse data collected from a population at a specific point in time (Bjørndal & Hofoss, 2004). This type of design makes it possible to measure the prevalence of exposure and/or outcome, but not any causal relationships between them, and is thus the weakest design of the observational design studies. The researcher is only observing, so it is important not to alter the exposure status.

Population and sample

All upper secondary schools in the four counties received information and written invitation to join the trial. In total 19 schools reported an interest in joining. Out of these 19 schools, 17 with 3100 1st grade students met the eligibility criteria. The final study population for the first cohort was 3003 and for the second it was 3022. The schools were randomised into control and intervention schools. The current study used data from the five control schools. At start-up, in august 2016, there were 720 students allocated to the control schools. After considering inclusion and exclusion criteria, 574 student were included in the control group in august 2017.

The present study use data from March 2017 and includes 574 students, of which 311 boys and 258 girls (5 replied other). The response rate was 79%, however some of the classes were away at the time of data collection, contributing to a reduced response rate.

Inclusion and exclusion criteria

Eligibility criteria for the COMPLETE trial were not previous or current involvement in the DSP or the MHST or in similar programmes, or in other similar research projects. Informed active consent was required. For those under the age of 16 at the time of survey data collection, parental consent was obtained.

Datacollection

Survey data was collected through an electronic questionnaire that students filled out in class under the administration of staff from Oxford Research. The questionnaires were available in both Norwegian and English. A 45-minute time slot was allocated for completing the questionnaire, but more time was given if needed. All data is stored in the University of Bergen

storage system, SAFE, in accordance with guidelines and requirements for the safe storage of data (T. Larsen et al., 2018).

Survey data

The study made use of electronic survey data collection. This is a type of self-administered questionnaire.

Advantages and disadvantages with electronic survey data questionnaire are that they are faster, simpler and cheaper compared to traditional questionnaires on paper. However, the response rate seem to be lower with electronic questionnaire forms, so more effort needs to be put in to increasing the response rate. The data collection period is shorter with electronic questionnaires as there is no need to punch the data into statistical programs. This may also reduce the risk of punching errors.

Measures

The questionnaire used in the COMPLETE trial asked several different questions related to many different variables to investigate the overall aim of the trial. The current study makes use of only a selection of these. The variables used in the current study relate to anxiety and depressive symptoms, teacher support and background variables such as gender and socioeconomic status (family economy). Data was obtained through surveys based on validated measures.

Anxiety and depressive symptoms

Anxiety and depressive symptoms were measured using the short form of the Symptom Check List (SCL-5) (Derogatis, 1992; Tambs & Moum, 1993) . The questions related to the following emotions and feelings in the past 14 days: Have you been «feeling fearful?», «nervous or shaking inside?», «feeling hopeless about the future?», «feeling blue?», and «worrying too much about things?». Each item was answered as follows: not bothered or distressed at all, slightly bothered or distressed, bothered or distressed quite a lot, or very bothered or distressed. Tambs and Moum (1993) report the alpha reliability for this short form questionnaire to be 0.85. The alpha obtained in the present study was 0.90. Reporting being bothered or distressed quite

a lot, or very bothered or distressed, qualified as being experiencing anxiety and depressive symptoms by definition.

Teacher support

Perceived teacher support measurements were based on a further development of the Teacher and Classmate Support scale (Samdal et al., 2016; Torsheim, Wold, & Samdal, 2000). The same questionnaire, apart from two of the questions, was also used in the HEVAS study (Samdal et al., 2016).

In the present study, the participants responded to items such as 'My teachers seem confident that I can do well in the subject', 'I feel like my teachers provide me with options to choose from', 'My teachers encourage me to ask questions', 'My teachers listen to how I want to do things', 'I feel understood by my teachers', 'I can be open to teachers', 'I feel my teachers accepts me as I am', 'I have great confidence in my teachers', 'My teachers give me full and precise answers to my questions' and 'I feel that my teachers care about me as a person'.

The scale contains 10 items with a five-point agreement scale 'Strongly agree' to 'Strongly disagree'. Higher scores represent a low level of perceived teacher support. Cronbach's alpha for the teacher support scale used in the present study was 0.954.

Socioeconomic status

To measure socioeconomic status, questions regarding parental education and perceived family income were used.

Parental education level was measured by asking: "What is your mother's/father's highest level of education?" with the alternatives 1-4: postgraduate degree, undergraduate degree, upper secondary school, other, or don't know.

Perceived family income was measured by asking "How wealthy is your family?", with the alternatives 1-5: poor economy, not so good economy, average economy, good economy, very good economy.

Gender

Three alternatives were available 1-3: girl, boy, or other.

Reliability, validity and generalizability

Any sources of error that may be due to the influence of the researcher must be considered. This may include the questionnaire itself. Using established scales from previous research ensures validity in the research. It is important to make sure that the questionnaire actually measure what it is meant to measure. Careful and critical evaluation of these points, it is easier to assess whether systematic errors exist and how they affect the study outcome. The study sample set out to describe a proportion of a larger population, but there will nevertheless be some uncertainties related to the outcome in relation to how well the study population actually represents the rest of the population. Whether findings can be generalized or not, must be considered based on study limitations. Statistics are used to assess whether the results of the study may be due to chance.

Reliability

Reliability relates to how consistent and stable the measurements are. For example, that the same measurements are produced every time. A test-retest can control this. Internal consistency measures how well the variables in the scale are related, often reported as Cronbach's alpha value. Pallant (2016) indicates that Cronbach's alpha value should be over .70.

In the present study, researchers were present at the data collection. This may have contributed to quality assurance of a good baseline measurement.

The recruiting procedure was assessed. It was investigated whether included respondents differed from those who were not included. The response rate and scales used were evaluated and tests of internal consistency on current variables were performed.

There may be a risk of cross-over effect in the study if teachers from participating schools exchange experiences with each other and affect the results. The schools were however informed and reminded that it is important that they do not share experiences other than through what is being organised by the researchers.

Validity

In order to assess validity there is a need to evaluate the presence of systematic/random errors, and confounding factors. If these errors are not present, it is reasonable to conclude that an observed correlation is valid. *Systematic errors* could occur for example if the control group in the study is different compared to the group receiving intervention before the intervention is given. In this case, it is impossible to know how much of the effect is actually caused by the intervention. In the current study, systematic error could occur if the students included in the study were different from those who are not included in the study. *Random errors* depend on sample size. A small sample is less likely to reflect the study population. *Confounding factors* means that an observed correlation (or non-correlation) between two variables might actually be due to a third variable. This third variable is correlated to both variables, for example exposure and outcome (Bjørndal & Hofoss, 2004).

Valid findings from the study sample are valuable if they can be transferred to the study population (external validity). However, if the study sample is different from the study population, the findings are of little use (poor internal validity). Further, with poor internal validity, there is no point in assessing external validity (Bjørndal & Hofoss, 2004).

Generalisability

As mentioned, study findings can be transferred to the study population if internal validity is adequate. If not, generalisability is not possible. There is a need to assess whether the study sample adequately represents the whole population. A high level of missing data may affect this assessment and the external validity.

Ethics, permission and consent

The COMPLETE study was approved by the Norwegian Centre for Research Data (NSD). Written and oral information about study aims and participation was given to all participants prior to participation. Participants under the age of 16 at the time of data collection, needed parental consent (T. Larsen et al., 2018). The project administration did not have access to parent contact information, so written information about the study and survey was therefore distributed to students via post, e-mail and SMS with instruction to forward this to their parents. Parents could give their consent either, via SMS to the project coordinator or via an electronic 'yes/no' response form.

The ethical principles in the Declaration of Helsinki (1964) as revised in October 2008 (WMA, 2008) were followed when designing the COMPLETE trial (T. Larsen et al., 2018). Participation was voluntary, anonymity secured, and participants could withdraw at any time without consequences or justification. Informed consent prior to the survey was mandatory. Data storage was in accordance with current data storage guidelines.

As the study includes children/adolescents, certain ethical considerations need to be made. For example, whether the questions can harm the participant. Can the questions induce depressive thoughts for example? Having a psychologist available if needed could be considered, or providing contact details of someone to talk to (on questionnaire or information-form).

Control schools were informed of the importance of not changing the way they work on reducing dropout during the period.

In relation to obtaining a declaration of consent, this was performed by the researchers themselves at the schools. Researchers' personal attendance could result in a higher response rate if students felt pressured to respond. Voluntary participation is essential, but it is a known fact that there is a higher response rate among demographic health surveys compared to survey research. This may be related to participants feeling obliged to respond to surveys when asked directly.

According to De Nasjonale forskningsetiske komiteer (2016), it is important that the researcher identify any possible risks that may accompany the project. For example, it should be considered whether the questions regarding anxiety and depression could lead to actualization of the problems and whether the school health service should be informed of this. Information about where to go to seek help or someone to talk to should be offered. Teachers were gatekeepers, and researches were not to discuss study findings with them.

Statistical analysis

The statistical tool SPSS version 25 was used for data analysis (IBM SPSS Statistics for Windows, 2017).

Preliminary analysis

As data from the COMPLETE trial was used, the first step was to select the relevant data for this current study. Then the dataset was checked for errors and missing values. A check was made to establish whether if some of the variables needed recoding.

To describe the selection, descriptive statistics were used and the following will be presented; mean age, gender, mean perceived teacher support, mean level of anxiety and depressive symptoms, mean parental education and mean family economy.

Recoding negatively worded items

The negatively worded items for the teacher support scales were reversed to ensure that high scores represented high levels of the characteristics being measured.

There was no need to reverse the anxiety and depression symptoms scale, as high item scores already indicated high level of symptoms.

The perceived family income scale was reversed so that high scores represented a high income level. Mother's/father's education scale was also reversed so that high scores represented high level of education.

Calculating total scale score

Before performing statistical analysis, the total scale scores for the scales was calculated. This was done after reversing negatively worded items and then adding together scores from all the items that make up the scales. (Pallant, 2016). Finally, the total scale score was divided by the number of items in the scale, for easier interpretation. This converted the scale back to its original scale used for each of the items. The procedure was conducted for the teacher support scale and the anxiety and depression symptoms scale. The new items were called TSYMPT5 and TSUPP10.

Correlation

To explore the correlation between the items anxiety and depressive symptoms, teacher support, family income and parental education level, correlation analysis was performed. This gave an overview of the correlation coefficients and the strength of the correlations.

Correlation analysis say something about the strength and the direction of the relationship between the variables (Pallant, 2016). A correlation of 0 show no relation, a correlation of 1 means a perfect correlation and at -1 shows it a perfect negative correlation . In order to interpret the findings, estimates correlation values as r = .10 - .29 , r = .30 - .49 (medium), r = .50 - 1.0 (large) were used (Pallant, 2016).

The relationships between perceived teacher support, perceived level of anxiety and depressive symptoms, perceived family income level and parental education level were investigated using Pearson product-moment correlation coefficient. Preliminary analysis were performed to check normality, linearity and homoscedasticity. Assumptions for parametric tests were not met, however Pallant (2016) states that with larger samples, the parametric test is robust enough to deal with the violations.

The function "split file" was used to investigate any gender differences regarding perceived teacher support, and level of anxiety and depressive symptoms.

Mediation analysis with PROCESS macro

Mediation analysis was conducted to investigate the relationship between socioeconomic status (family income level), anxiety and depressive symptoms and teacher support. Teacher support was included in the model as a mediator to investigate whether teacher support may have an indirect effect on the relationship between family income level and anxiety and depressive symptoms in adolescence.

The PROCESS macro version 3.0 (Hayes, 2012) was used to conduct the mediation analysis with model 4 (figure 2). The significance level was set to p<0.05. At this level, it is less than 5% likely that significant findings are actually due to chance (Bjørndal & Hofoss, 2004).

The PROCESS macro enables the possibility to establish not only whether the variable X affects the variable Y, but also whether this causal affect operates through an indirect effect of X on Y through a third variable, the mediator variable M (Hayes & Scharkow, 2013).

Model 4

Conceptual Diagram
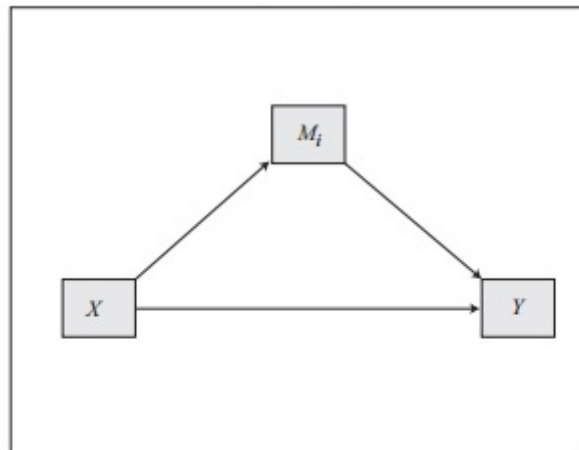
Statistical Diagram

Indirect effect of X on Y through $M_i = a_i b_i$

Direct effect of X on $Y = c'$

Note: Model 4 allows up to 10 mediators operating in parallel.

Figure 2 Conceptual and statistical diagram of model 4 in PROCESS.

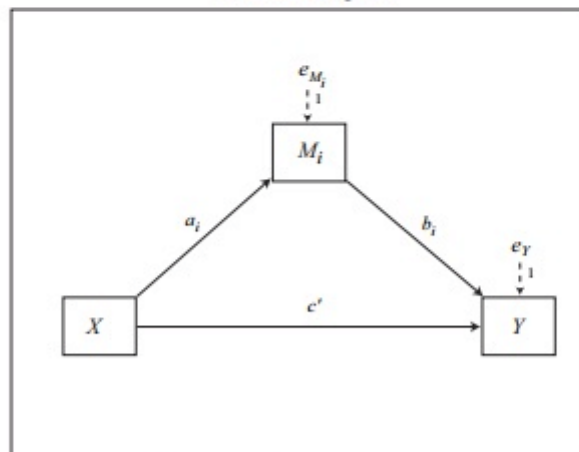Mediation analysis has become a popular methodology in research and the indirect effect is important in the process (Hayes & Scharkow, 2013). Advice for researchers exist about what tests to use in certain circumstances. Hayes and Scharkow (2013, p. 1920) calls this 'a test's relative trustworthiness' which say something about how frequently different tests produce different answers or whether there is on preferred test when disagreement occurs. The authors state that most of the time and in samples >500, there is no difference in what test you choose. However, sometimes it does matter. For example, the delta method also called the Sobel test should be avoided as it is the least powerful and least trustworthy of all methods when there is

an indirect effect (Hayes & Scharkow, 2013, p. 1924). Methodologists have discouraged the method for years due to its low power. The bias-corrected bootstrap CI might be the best test to use when an indirect effect exist. This test is powerful and trustworthy according to Hayes and Scharkow (2013), but is may cause elevation of false positives and worse coverage in smaller samples.

The Monte Carlo CI and the distribution-of-the-product both offer good Type 1 error protection, but are less powerful and less trustworthy when an indirect effect exist compared to the bias-corrected bootstrap CI.

All methods, except the bootstrap methods, require estimates of the standard errors. These methods are therefore vulnerable to changes in standard errors like heteroscedasticity. The tests that generate a bootstrap CI does not require a standard error.

The percentile bootstrap CI is recommended preferable to use rather than the bias-corrected bootstrap CI (Hayes & Scharkow, 2013).

When reporting the results from a mediation analysis, Hayes (2013) recommends reporting the model coefficients, direct, indirect, and total effects in unstandardized form. In addition, the author recommend expressing in the text that an unstandardized metric is used. The p-value does not need to be included, as this value does not say anything about whether the indirect effect is zero or not. However, the point estimate of the indirect effect should be reported, and the inferential test to support that the effect is not zero. Precise language is also important when reporting analysis results. For example, in a simple mediation analysis, it is X that is the cause of Y directly/and or indirectly through M. It is not correct to talk about an "indirect effect of M" or the "mediated effect" (Hayes, 2013, p. 201). Finally, both direct and indirect effect(s) as well as an inferential test for each should be reported. As already mentioned, the Sobel test is not recommended when conducting inferential tests for indirect effects. Rather, bootstrap confidence intervals should be reported (Hayes, 2013). It is important to specify the numbers of bootstrap samples and the method used for constructing confidence intervals (i.e. percentile, bias-correlated, or bias-corrected and accelerated) (Hayes, 2013, pp. 201-202).

Mediation analysis with multiple independent variables

According to Hayes (2013) it is possible to perform mediation analysis with multiple X variables with the same procedure as discussed above. Figure 3 (taken from Hayes, 2013, p.

194) show a simple mediation model with multiple independent variables. Even though it is possible to perform, the author stress that it is important to be aware that in a model with multiple X's, the total, direct, and indirect effects of X may or may not be the same as the effects in a model with only one X variable. Any differences will depend on the size of the correlations between the X's, as well as the correlations between other X's and M and Y (Hayes, 2013, p. 195). Thus, a model with multiple independent variables will give an estimate of one X's effect on Y that is unique to that specific X relative to the other X's included in the model. On the other hand, when analysing the X's separately gives an estimate of the X's direct and indirect on Y and, potentially the effect of other X's excluded from the model. Further, the author conclude that there is no right or wrong here as long as the interpretation of results is undertaken with care. For example when including multiple independent variables in the same mediation model, there is a risk that highly correlated X's will cancel each other's effects out, as when including statistical controls. The concern is that two (or more) highly correlated X variables that are included in the same model, might also be correlated with M or Y, and they will compete against each other on which one explain the variation in M and Y. The stronger the associations between the variables are, the greater risk of such problem there is. This means that when performing the analysis with only one X at the time, there might be a direct and/or indirect effect on Y through M, but when performing the analysis with the X's simultaneously, none of them appears to have an effect (Hayes, 2013).

In the present study, family income is the X variable. For a broader picture of the effect of socioeconomic status, it would be possible to add maternal and paternal education into the equation (separately or simultaneously) to see whether there was a direct and/or indirect effect on anxiety and depressive symptoms. However, due to these X variables being highly correlated, and the increased risk of the variables cancelling out each other's' effect, simultaneously analysis will not be performed.

I wanted to perform mediation analysis for boys and girls separately. This would test whether teacher support had a gender-specific mediating effect on the relationship between family income and anxiety and depressive symptoms. However, due to difficulties in running this procedure in PROCESS, the analysis was not completed.
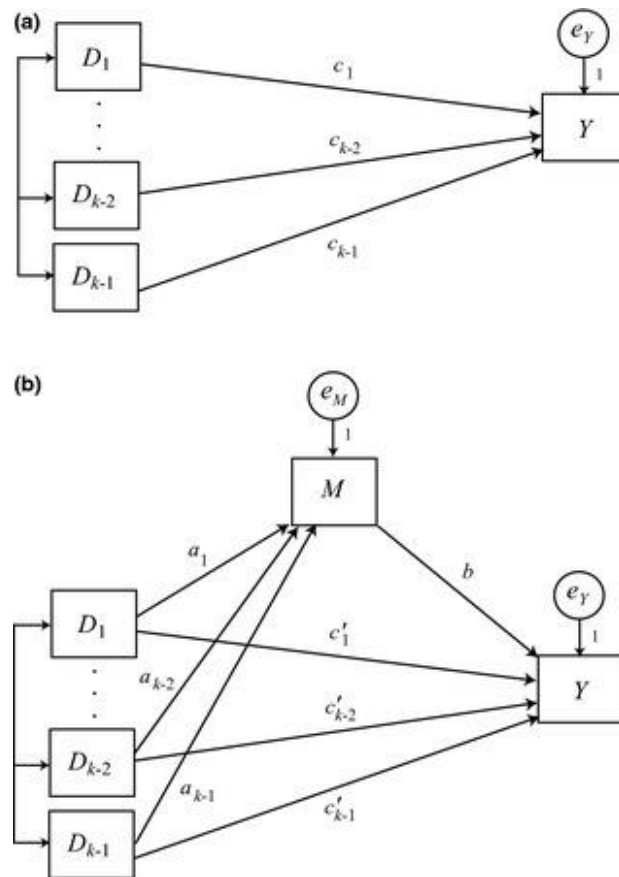
Figure 3 Statistical diagram of model 4 in PROCESS with multiple independent variables

Missing values

Missing data is common in all research, even in well-designed and controlled studies. This can reduce the statistical power and produce bias, as well as reduce the representativeness and complicate the analysis of the study. Further, it may threaten the validity of the study and lead to invalid conclusions (Kang, 2013). There are several ways to deal with missing data in the statistical analysis, some with dramatic effects (Pallant, 2016). The exclude cases pairwise option, where the case is only excluded if the data for the specific analysis is missing, was used in the present study. The teacher support variable had 45 missing values, which is 7.8% of the study population. Anxiety and depressive symptoms variable had 28 missing values, which is 4.9 % of the study sample. It is difficult to say how this affects the results. After recoding the "don't know" and the "other" reply alternatives in the mother/fathers education level variables (for analysis purposes) into missing, respectively 172 (29.9%) and 210 (36.6%) were missing. Still, the population is considered as a large group, so it is possible that it has little effect on the results.

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Results

The following section will address the results from the statistical analysis.

Descriptive statistics

Table 1 shows the frequency percentage of reported level of anxiety and depressive symptoms.

Table 1 Anxiety and depressive symptoms

	Frequency	*Valid Percent*
Not bothered or distressed at all	310	56,8
Slightly bothered or distressed	148	27,1
Bothered or distressed quite a lot	68	12,5
Very bothered or distressed	20	3,7
Total	546	100,0

Table 2 shows the frequency percentage of reported perceived level of teacher support.

Table 2 Teacher support

	Frequency	*Valid Percent*
Strongly disagree	17	3,2
Do not agree	60	11,3
Neither agree or disagree	234	44,2
Agree	165	31,2
Totally agree	53	10,0
Total	529	100,0

Table 3 show perceptions of socioeconomic features like family income and education level. The majority (43.9 %) of the adolescents perceive their family as a family with good economy.

Table 3 Perceived family income level

	Frequency	Valid Percent
1. Poor economy	9	1,6
2. Not so good economy	35	6,2
3. Medium economy	155	27,5
4. Good economy	247	43,9
5. Very good economy	117	20,8
Total	563	100,0

Further, table 4 show that 45.9 % reported their fathers' highest education level as being upper secondary school, and 54.7 % reported their mothers' highest education level as lower university degree (table 5).

Table 4 Fathers' highest education level

	Frequency	Valid Percent
1. Upper secondary school	167	45,9
2. University lower degree/equivalent (e.g. bachelor)	133	36,5
3. University higher degree/equivalent (e.g. master)	64	17,6
Total	364	100,0

Table 5 Mothers' highest education level

	Frequency	Valid Percent
1. Upper secondary school	110	27,4
2. University lower degree/equivalent (e.g. bachelor)	220	54,7
3. University higher degree/equivalent (e.g. master)	72	17,9
Total	402	100,0

Table 6 show that mean perceived teacher support 3.71. The scale range from 1-5 representing strongly disagree to strongly agree. The mean was close to the value 4 (agree). The skewness value of -.48 indicated a clustering of scores at the high end (right-hand side of a graph). The

kurtosis value of .26 suggest a rather peaked distribution with long thin tails. This was controlled and confirmed by inspecting the shape of the distribution curve in a histogram.

The anxiety and depressive symptoms scale, range from 1-4 representing "was not bothered or distressed at all" to "very much bothered". The mean level was 1.92 which is close to the value 2 ("was a little bit bothered"). The positive skewness value of .82 indicates a clustering of scores to the left at the low values. A negative kurtosis value of -.25 indicates a relative flat distribution (many cases in the extremes). This was controlled and confirmed by inspecting the distribution of scores in a histogram.

Means, standard deviations, and test of normality are presented in table 6, along with results from t-tests of gender differences in means. Girls reported significantly higher levels of anxiety and depressive symptoms and significantly less perceived teacher support, compared to boys. There were no gender differences in perceived family income.

Table 6 Descriptive statistics and gender differences of the study variables

Variables			Total sample		Boys	Girls	t
	N	Mean (SD)	Skew(SD)	Kurtosis(SD)	Mean (SD)	Mean (SD)	
Depressive sympt	546	1.92 (.85)	.82 (.11)	-.25 (.21)	1.65 (.69)	2.24 (.92)	6.79***
Teacher supp	529	3.71 (.84)	-.48 (.11)	.26 (.21)	3.86 (.92)	3.55 (.87)	-4.87***
Family income	563	3.76 (.91)	-.53 (.10)	.16 (.21)	3.78 (.91)	3,75 (.91)	-.03

*p < .05; **p < .01; ***p < .001.

Correlation between perceived teacher support and anxiety and depressive symptoms

There was a moderate, negative correlation between level of perceived teacher support and anxiety and depressive symptoms, r = -.33, n = 519, p < .01, with high levels of perceived support from teachers associated with lower levels of anxiety and depression symptoms.

Correlation between teacher support and perceived income level

Further, there was a weak, positive correlation between perceived teacher support and perceived income level, r = .22, n = 526, p < .01, with high level of perceived income associated with higher levels of perceived teacher support.

Correlation between anxiety and depressive symptoms and income level

There was also a weak negative correlation between anxiety and depressive symptoms and perceived family income level, r = -.21, n = 543, p < .01, with high levels of perceived family income associated with lower levels of anxiety and depressive symptoms.

Correlation between anxiety and depression and parental education

There was a weak negative correlation between anxiety and depressive symptoms and mother's education level, r = -.13, n = 402, p < .05, with high level of mother's education being associated with lower levels of anxiety and depressive symptoms. No correlation was found between anxiety and depressive symptoms and father's education level.

Table 7 Pearsons product-moment correlations between measures of perceived support, anxiety and depression symptoms and level of education

Scale	1	2	3	4	5
1. Perceived family income level	1				
2. Perceived teacher support	,22**	1			
3. Anxiety and depressive symptoms	-,21**	-,33**	1		
4. Fathers education level	,15**	0,01	0,09	1	
5. Mothers education level	,14**	0,09	-,13*	,38**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Gender differences in perceived teacher support and anxiety and depressive symptoms

The correlation between perceived teacher support and perceived anxiety and depressive symptoms for males was r = -.28, while for females it was -.29. By visual inspection, the values are not that different from each other, which was confirmed by testing the statistical significance of the difference between correlation coefficients using the online calculator at http://vassarstats.net/rdiff.html as explained in Pallant (2016).

Gender differences in perceived family income and teacher support

The same procedure was conducted for the variable family income in relation to teacher support. For girls, the correlation between family income and teacher support was .18 (p < .01, n = 240) and for boys the correlations was .24 (p < .01, n = 283). However, after testing the statistical significance of the difference between correlation coefficients using the online calculator (Pallant, 2016), the correlation was found to not significantly differ between genders.

Gender differences in perceived family income and anxiety and depressive symptoms

The same procedure was conducted for the variable perceived family income in relation to anxiety and depressive symptoms. For girls, the correlation was -.32 (p < .01, n = 247) and for boys the correlations was -.09 (p < .05, n = ?). When testing for statistical significant difference between these two correlations, the correlation was found to be significantly different between genders, given that the p-value is less than .05. Thus, there was a statistically significant difference in the strength of the correlation between family income and anxiety and depressive symptoms for boys and girls. Family income explains significantly more of the variance in anxiety and depressive symptoms for girls than for boys.

Table 8 Comparing the correlations coefficients for boys and girls

Variables		*1*	*2*	*3*	*4*	*5*
Girls	1. Family income level	1				
	2. Teacher support	,18**	1			
	3. Anxiety and depressive symptoms	-,32**	-,29**	1		
	4. Fathers education level	,17*	0,03	0,04	1	
	5. Mothers education level	0,11	0,07	-0,10	,42**	1
Boys	1. Family income level	1				
	2. Teacher support	,24**	1			
	3. Anxiety and depressive symptoms	-0,09	-,28**	1		
	4. Fathers education level	0,13	0,00	,15*	1	
	5. Mothers education level	,16*	0,05	-0,08	,36**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Mediation analysis with PROCESS model 4

Indirect effect

Mediator (m)
Teacher support

a

b

Independent variable (x)
Family income

c'

Outcome variable (y)
Anxiety and depressive symptoms

Direct effect
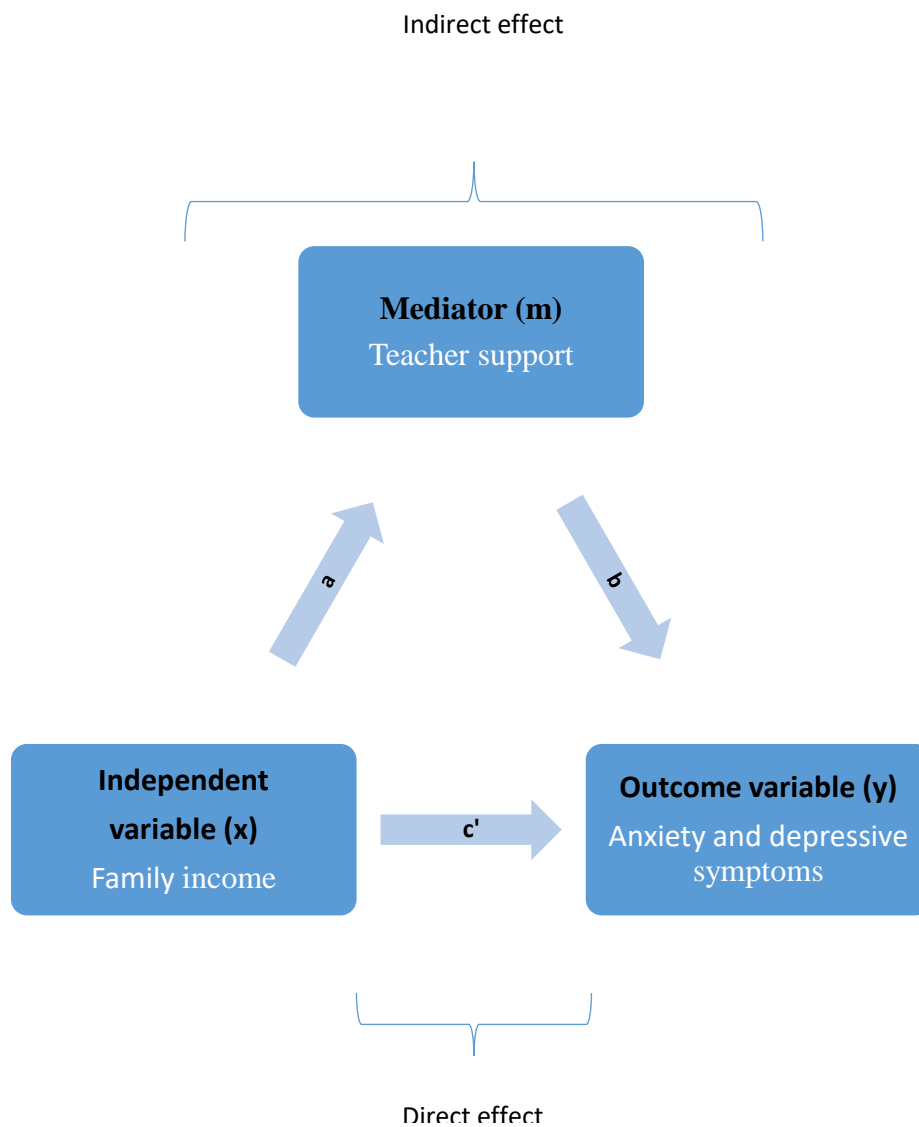
Figure 4 Mediation analysis

Model 4 in PROCESS was used for the mediation analysis (figure 4). To test for mediation one should estimate the following three regression equations, according to Baron, Kenny, and Reis

(1986): 1: Regressing the mediator on the independent variable. 2: Regressing the dependent variable on the independent variable. 3: Regressing the dependent variable on both the independent variable and on the mediator. Separate coefficients for each equation should be estimated and tested. To establish mediation, the following conditions must be met. 1: The independent variable must affect the mediator in the first equation. 2: The independent variable must be shown to affect the dependent variable in the second equation. 3: The mediator must affect the dependent variable in the third equation. If these conditions all hold in the predicted direction, the effect on the independent variable on the dependent variable must be less in the third equation than in the second. Perfect mediation holds if the independent variable has no effect when the mediator is controlled. This is the case if the boot strap-values contain the value zero.

The indirect effect: Teacher support was added to the equation as a mediator, to test if the relationship between income and anxiety and depressive symptoms was mediated through teacher support ($a+b=.058$).

This indirect effect show a tendency for those reporting higher levels of family income levels to feel more support from the teachers (because a is positive), which in turn translates into reduced level of anxiety and depressive symptoms (because b is negative). This indirect effect is statistically different from zero, as revealed by a 95% BC bootsrap confidence interval that is entirely below zero (-.093 to -.028).

Direct effect: The mediation analysis confirmed a direct effect between family income and level of anxiety and depressive symptoms. Thus, family income level therefore predicts level of anxiety and depressive symptoms. ($c' = -.141$). Family income also predicted teacher support ($a = .197$). This is what we expected. These direct effects are statistically different from zero, as revealed by a 95% BC bootstrap confidence interval that is entirely below zero (-.219 to -.0628) and above zero (.1177 to .2763) respectively.

The direct effect of family income, $c' = -.141$, is the estimated difference in anxiety and depressive symptoms between two adolescents experiencing the same level of teacher support, but who differ by one unit in their reported level of family income. The coefficient is negative, meaning that the adolescents reporting higher level of family income, but who is experiencing the same level of teacher support, is estimated to be .141 units lower in his or her reported level of anxiety and depressive levels. From the PROCESS output, shows that this direct effect is

statistically different from zero, $t(515) = -3.538$, $p = .0004$, with a 95% confidence interval that is entirely below zero (-.219 to -.0628).

The total effect: The sum of the two pathways of influence c' and ab, yields the total effect of X on Y. The total effect of family income on anxiety and depressive symptoms is derived by summing the direct and indirect effects, or by regressing anxiety and depressive symptoms on family income by itself: c = c' + ab = -.141 + .058 = -.083.

This can be interpreted as: two adolescents who differ by one unit in perceived family income are estimated to differ by -.083 units in their reported level of anxiety and depressive symptoms. The negative sign means that the adolescent from families with higher income, report less anxiety and depressive symptoms. This effect is statistically different from zero, $t(515) = -4.888$, p = .0000, or between -.2795 and -.1192 with 95% confidence.

Discussion

The aim of this thesis was to investigate self-reported anxiety and depressive symptoms in adolescence in relation to level of teacher support, socioeconomic status and gender differences. The mean level and the percentage levels in these variables were investigated. It was also investigated whether the relationship between income and anxiety and depressive symptoms was mediated through the effect of teacher support.

To enlighten the thesis' research questions, a discussion regarding the study findings in relation to previous research and theory will now follow. First, the main findings will be summarized and presented shortly, and thereafter a more thoroughly discussion will follow. Study strengths and limitations will also be presented. In addition, thoughts about the practical consequences the study might have in the field of 'health promotion work and health psychology' will be presented, followed by recommendations for further research.

Study findings summary

In the present study 43.2% of the adolescents reported that they were bothered or distressed quite a lot or very bothered or distressed with anxiety and depressive symptoms. 25.3% of the girls and 8.6% of the boys reported such symptoms. The mean level of anxiety and depressive

symptoms was 1.92 (scale ranging from 1-4). Girls and boys reported a mean level of 2.24 and 1.65 respectively. The mean difference was statistically significant different between genders, and confirms the hypothesis "there will be gender differences in percentage and mean levels of anxiety and depressive symptoms".

Further, the adolescents reported mean perceived teacher support level to be 3.71 (on a scale ranging from 1-5). Boys reported a significantly higher level of teacher support compared to girls, 3.86 and 3.55 respectively. Totally, 81.0% of the adolescents reported that they perceived the teacher as supportive, of which 50% of the boys and 31% of the girls perceived their teacher as supportive. These findings confirms the hypothesis "there will be gender differences in percentage and mean levels of perceived teacher support".

There was a negative correlation between perceived teacher support and level of anxiety and depressive symptoms in the adolescents, with high levels of perceived support from teachers being associated with lower levels of anxiety and depressive symptoms. This confirms the hypothesis "there will be a negative correlation between teacher support and the level of anxiety and depressive symptoms".

The mean level of family income was reported to be 3.76 on a scale ranging from 1-5, with no significant gender differences found (3.78 for boys and 3.74 for girls). However, a negative correlation between anxiety and depressive symptoms and family income level was found, which confirms the hypothesis that "there will be a negative correlation between socioeconomic status and the level of anxiety and depressive symptoms". The correlation was significantly stronger for girls compared to boys.

Further, investigation on the relationship between family income level, anxiety and depressive symptoms, and teacher support was conducted by mediation analysis. Analysis found that teacher support partly mediated the relationship between socioeconomic status and anxiety and depressive symptoms in adolescence. This confirms the hypothesis "teacher support, partly mediates the relationship between socioeconomic status and anxiety and depressive symptoms".

Study findings in relation to theory and previous research

When searching for literature I tried to find studies that measured self-reported anxiety and depressive symptoms, and not the clinical diagnosis of depression and/or anxiety. I also looked

for measurements of teacher student relationship reported by the students. This would make it easier to compare the findings in the present study. Abstracts and articles were read to separate the relevant and less relevant studies from each other. This process was not all easy as some studies were unclear about what they had investigated. For example, some specified that it was anxiety and depressive symptoms or only depressive symptoms that were used as a measurement for mental health. Others referred to cognitive and affective/behavioural outcome, or emotional distress. Another study referred to student mental health difficulties in the title, but after a closer look, it was clinical depression and social anxiety that were being measured. When different methods and measurements are used, the studies may not address the same problem, which reduce the comparability to the present study. In this thesis, I compare my findings to studies measuring depressive symptoms, depressed mood and emotions in community samples of adolescents.

The studies related to teacher support was easier to find as they included the term 'teacher support', 'student teacher relationship' or 'educational context' in the titles. Measurements of the relationships were referred to as either student rated or perceived support, which is the same as in the present study. One study measured teacher rated support. Due to different age spans in some of the previous studies, most literature were not directly comparable to the present findings. However, in light of theory, it was possible to discuss findings in relation to previous work.

Anxiety and depressive symptoms in adolescence – gender differences

In the present study the hypothesis "there will be gender differences in percentage and mean level of anxiety and depressive symptoms" was confirmed. Overall, 16.2% of the adolescents reported that they experienced anxiety and depressive symptoms, of which girls reported a significantly higher level compared to boys, 25.3% and 8.6% respectively. The mean level of anxiety and depression was 1.92 overall, and 1.65 in boys and 2.24 in girls.

According to Folkehelseinstituttet (2015b) the prevalence of depressive symptoms is increasing in adolescence in upper-secondary school, referring to findings from 2006 and 2012 (Øya in Folkehelseinstituttet, 2015b). There seems to be a developmental trend in society where depressive symptoms in adolescence become more and more common. The current study can only to some extent support this due to the present data collected at one point in time. However, the overall level of anxiety and depressive symptoms in the present study is about the same as

the general level of 15-20% in Norwegian adolescents reported by Folkehelseinstituttet (2015b) and Holsen (2009).

The observation that girls report higher levels of anxiety and depressive symptoms compared to boys, is supported by Bakken (2017) who found that 28% of girls and 9% of boys, in a nationally representative study population, reported depressive symptoms in first year of upper-secondary school. The study measured depressive symptoms by self-reporting the experience of certain feelings and emotions during the previous week. These measurements used in the study by Bakken (2017) were quite similar to those used in the present study to determine symptoms of anxiety and depressive symptoms, except one question about experiencing feelings of anxiousness and fear, which is only included in the present study. Bakken (2017) refer to anxiety and depressive symptoms, even though he report findings of only depressive symptoms and not symptoms of anxiety. It is possible that these symptoms are referred to interchangeably, due to comorbidity of symptoms.

In the present study the definition of experiencing anxiety and depressive symptoms is the combination of the variables "bothered or distressed quite a lot" or "very bothered or distressed", whereas in Bakken (2017) it is defined as those reporting a mean level of symptoms of "bothered or distressed quite a lot". Regardless of the differences in measurements , I find the studies comparable.

One explanation for the gnder differences in anxiety and depressive symptoms may be due to biological, psychological and sociological changes in adolescence. The biological explanation, to do with hormonal changes in puberty, cannot alone explain the gender difference in the present study as the study population is beyond pubertal age. However, some experience onset of puberty at a later stage compared to others, so it still might have some influence on the outcome. Another explanation for the gender difference is due to that boys and girls may not perceive the world and themselves in the same way. Further, as suggested by Nolen-Hoeksema et al. (1994), girls may be more prone to develop depressive symptoms due to that they bring more risk factors for depression into the adolescence period, and that they experience several biological and social difficulties in this period compared to boys. Examples of such risk factors may be society norms and expectations, and personality traits like being introvert. It is possible that the girls in the present study experience more pressure and higher expectations related to things like performance and their choice of school/career compared to the boys. If these are related to expectations and increased pressure from parents, it is possible that it could affect the

bonding relationship within the family. According to social capital theory, bonding is beneficial for mental health (Almedom, 2005), and opposite it would be detrimental for mental health if disturbed. Thus, discrepancies in the social environment within the family can affect mental health, and to some degree explain higher prevalence of anxiety and depressive symptoms in girls in the present study. In addition, according to Bourdieu's social capital theory, positive social relationships, may buffer against negative circumstances in the environment. As for example when the social interaction with parents is problematic, teachers may act as such a buffer. However, if the bonding with teachers is not adequate, it may result in reduced level of perceived support from the teachers as well as parents. If this is the case, the adolescents have less sources of support in difficult times, and reduced level of social capital. As social capital can also operate as a health asset, a reduced level of social capital would also result in fewer resources to rely on for stronger health for these adolescents. Although these kinds of risk factors could be challenging for both boys and girls, it seems like that when several risk factors meet in adolescence, girls suffer more and are therefore more prone to develop anxiety and depressive symptoms. This theory receives support from Campbell, Byrne, and Baron (1992) who found that gender differences declined after controlling for feminine characteristics.

It is also possible that emotions related to anxiety and depressive symptoms are more accepted among girls compared to boys. This can result in boys hesitating to recognise and report such symptoms compared to girls. The present study support this as the response rate related to the anxiety and depressive symptoms was 94.2% in boys compared to 96.5% in girls. This give some ground to believe that the boys hesitated to report their feelings and symptoms. However, there were more boys than girls included in the study, which may have caused an underestimated in boys' response rate.

Perceived teacher support – gender differences

In the present study the hypothesis "there will be gender differences in percentage and mean level of teacher support" was confirmed. The adolescents in the present study reported, on a scale 1-5 (1 is strongly disagree and 5 is totally agree), the mean level of teacher support to be 3.71. Taking a closer look at the gender differences, the mean level reported by girls was significantly lower (3.55) than reported by boys (3.86). In boys, 50% reported that they agreed or totally agreed with experiencing teacher support, compared to 31% of the girls. Of those

reporting that they did not experience teacher support (strongly disagree or do not agree), 20% were girls and 9.9% were boys.

Previous research in relation to gender differences in teacher support, find diverse results. For example De Wit et al. (2011) and Undheim and Sund (2005) found no difference between genders in the perception of teacher support in 9th and 10th grade or at age 12-15 in Canadian and Norwegian schools respectively. And Furrer and Skinner in De Wit et al. (2011) actually found that girls reported stronger feelings of teacher support than boys did at younger ages.

Opposite, Bakken et al. (2016) found that boys were more likely to report on caring teachers compared to girls (48% and 43% respectively) in a Norwegian representative study population. In another study by Bakken (2017), 9 out of 10 adolescents reported that the teachers cared about them, of which 90% of boys and 87% of girls in their first year of secondary school reported teachers as caring.

It is difficult to compare these findings directly to the present study due to the use of different measurements. To measure teacher support, Bakken (2017) asked the students to report whether they agreed or disagreed with the claim that their teachers are caring. Those reporting that they agreed with the claim "teacher cares about me" indicated perceived care from teachers. Teacher support is more broadly measured in the current study, and the indicator of teachers being perceived as caring, as used by Bakken (2017), are also included in the teacher support scale. Thus, the current study gives a much broader picture of how the adolescence perceive their teachers in relation to several things, like autonomy and motivation, and not only whether they are caring or not. This could be one reason for the large discrepancy between the findings by Bakken (2017) and the present study.

It seems like that previous research show contradicting findings depending on age, where no gender differences in perceived teachers support were found at younger ages, but at older ages girls seem to report less perceived support. One explanation could be as De Wit et al. (2011) suggest, that younger girls are more attuned and responsive towards their teachers at younger ages, but that this changes when they get older. At older ages, in upper secondary school, the observation that girls experience less teacher support could reflect that girls tackle the transition from secondary school to upper-secondary school differently compared to boys and that they turn to significant others for support in this period, like their peers instead of teachers.

Findings also show that the level of caring teachers, decreases from the first to the second year of upper-secondary school (down 1%) for both girls and boys (Bakken, 2017). From the second to the third year, the level was stable. Thus, there are challenges related to teacher support for both genders, however to a larger extent in girls. The fact that the level stabilised in the last two years of upper-secondary school might indicate that things normalise and the relationship with their teacher become closer. This could indicate that the first year of upper-secondary school is a difficult time, not only academically, but also socially. It could also reflect that it takes time to develop a positive relationship with new acquaintances like new teachers.

Allowing to interpret the present findings in relation to previous research, it seems like that the perception of teacher support declines in both genders as the adolescents get older, and that girls may struggle with the social interaction with teachers more than boys after transition to upper-secondary school. This is worrying as teachers may play an important role in adolescents' lives. For example, in relation to self-determination theory, teachers are important factors for motivation and autonomy. According to this theory, teachers may actually be able to increase intrinsic motivation in adolescents leading to an increased genuine interest for schoolwork rather than it being just a duty. However, it is a prerequisite that the adolescents are approachable for the teachers, and that the teachers make an effort. It is thinkable that adolescents reporting low levels of teachers support are not approachable, reducing the positive impact that teachers may have. Accordingly, girls may benefit less from the important teacher qualities compared to boys. Further, according to Bourdieu's social capital theory, teachers may be an important part of the adolescents' social life and a social resource for developing positive health and welfare. However, girls may benefit less of this positive effect compared to boys.

Correlation between anxiety and depressive symptoms and teacher support

In the current study, the hypothesis "there will be a negative correlation between anxiety and depressive symptoms, and teacher support" was confirmed. There was a negative correlation between perceived teacher support and level of anxiety and depressive symptoms in the adolescents, with high levels of perceived support from teachers being associated with lower levels of anxiety and depressive symptoms. Colarossi and Eccles (2003) and Wang et al. (2013) support this in their longitudinal U.S. studies investigating adolescents aged 15-18 and 13-18 respectively. In Wang et al. (2013) teacher support was teacher rated, questioning the ability to compare results with other findings of adolescent rated teacher support. A negative correlation

was found by De Wit et al. (2011) who measured teacher support and depressive symptoms and social anxiety in younger adolescents after transition to high school in their cohort. Whereas LaRusso et al. (2008) reported findings from a telephone survey with students in the U.S investigating teachers as a builder of respectful school climates and the implications for depressive symptoms in high-school. A recent literature review added further support for a negative correlation and concluded that a positive teacher student relationship may have a protective effect on students' mental health problems such as depression (Krane, Karlsson, et al., 2016).

Krane, Ness, et al. (2016) investigated whether certain teacher qualities could be of importance for students' mental health in upper secondary school, using a qualitative and participative approach with semi structured individual interviews and focus groups. The adolescents reported the most important teacher qualities to be; mutual responsibility in the teacher student relationship, being fair and kind, having good communication skills, and helping the students to adapt to academic and personal needs. These teacher characteristics are important factors in the adolescences' social environment that may induce intrinsic motivation (Ryan & Deci, 2000b). It is thinkable that such characteristics in a teacher may increase motivation and interest in school related activities. In the long run, these teacher characteristics may have a protective effect on development of anxiety and depression. On the other hand, characteristics associated with threats, deadlines and other controlling factors, could reduce the level of autonomy and weakens intrinsic motivation in the adolescents.

Ryan and Deci (2000a) further state that most activities people do are extrinsically motivated, and that the level of intrinsic motivation decreases after early childhood due to influences of social demands and important others. Thus, it is important that teachers engage their students to a greater extent, facilitating intrinsic motivation and the sense of autonomy. In this way, teachers may play an important role in the prevention of development of anxiety and depressive symptoms in adolescence. Girls may be especially important to target.

As findings suggest that adolescents reporting poor relationships with their teachers struggle more with anxiety and depressive symptoms, compared to adolescents reporting their teachers as supportive, it is important to discuss why this is. According to theory, the social environment in adolescence, like the school environment, might affect health outcomes, and there seem to be an interplay between several risk factors in the development of anxiety and depressive symptoms. For example, according to Bourdieu's social capital theory (Bourdieu, 1986),

positive social relationships may buffer against negative circumstances in the environment. Further, according to Morgan et al. (2010) and the health asset model, good social relationships, for example between student and teacher, can act as a resource towards stronger health and reduced inequities in health. In addition, the self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000b) stress that factors like autonomy and motivation, are important attributes in the social environment in schools. These factors are intertwined and one might affect the other.

Correlation between socioeconomic status and anxiety and depressive symptoms

In the present study the hypothesis, "there will be a negative correlation between socioeconomic status and the level of anxiety and depressive symptoms" was confirmed. The present study found a negative correlation between anxiety and depressive symptoms in adolescence and perceived family income level. This means that a higher level of perceived family income related to lower levels of anxiety and depressive symptoms. Accordingly, adolescents' perceptions of relative poor family wealth was found to relate to being more bothered with anxiety and depressive symptoms.

Previous studies support this finding of which in families with higher socioeconomic status, the adolescents struggle less with these symptoms, compared to adolescents in families with lower socioeconomic status (Bøe, 2013, 2015; Evans, 2004; Holmboe, 2006; Undheim & Sund, 2005). Some suggest that persistent poverty relates to more severe mental health problems, but that the effect is reversible with an improved income (Mcleod & Strohschein in Bøe, 2013, p. 15). Undheim and Sund (2005) found in their longitudinal study of Norwegian adolescents aged 12-15, that socioeconomic status measured by occupation, was one of the major contributor of the variance in depressive symptoms in the adolescents. Depressive symptoms were measured as self-reported emotions and feelings during the past two weeks. Additional support was found by Bøe (2013) who measured socioeconomic status by family economy and highest completed education reported by parents in 9340 Norwegian 2-4th graders. Mental health was measured by parents describing their children's positive and negative attributes.

As findings suggest that adolescents from families with lower socioeconomic status experience more anxiety and depressive symptoms compared to adolescents from families with higher socioeconomic status, it is important to discuss why. One explanation relates to the parents' own mental health. Some suggest that parents in families with lower socioeconomic status are

more likely to also struggle with mental health issues and that they therefore are less capable of caring for their children compared to parents with higher socioeconomic status. In addition, low socioeconomic families are also less likely to make contact with the health services (Bøe, 2013) suggesting that children in these families may experience anxiety and depressive symptoms for a prolonged period of time. Further, according to social capital theory, it is possible to think that parents in family with low socioeconomic status possess less and have less access to social capital. For example, families with higher socioeconomic status are more likely to be more engaged in their children's lives, and more involved in school activities compared to parents from families with low socioeconomic status (Evans, 2004). For example, the parents were more likely to know the teacher by name, more likely to be able to name their child's favourite subject, and more often were they able to know how well the child was doing in school (Baker and Stevenson in Evans, 2004, p. 81). A higher involvement in school activities by parents, related to the children feeling greater sense of belonging at school. In relation to the present study, it is possible that the adolescents from families with lower socioeconomic status were less involved in school activities, causing less sense of belonging and connectedness with teacher. Further, this would possibly affect the perceived level of support from the teacher. This fits well with social support theories suggesting that social support reduces vulnerability to anxiety and depressive symptoms. Further, these studies could indicate that families with higher socioeconomic status are better at exploiting their available health assets compared to families with low socioeconomic status.

Further according to social capital theory, Wirback et al. (2014) found that girls at age 17-18 were especially at risk of developing depressive symptoms in families with low socioeconomic status, measured by parental reported education level and occupation, when living with only one parent. Depressive symptoms were measured by reported certain mood or behaviours during the past 30 days. Such finding support that all positive relationships (like living with both parents) increase social contact and social support and that this relates to less depressive symptoms. Further, Kawachi et al. 1999 in Starrin (2009, p. 38) refer to that the positive effects of social capital on health, are larger in families with low socioeconomic status, compared to in families with high socioeconomic status. Thus, social capital might be more important to emphasise in low socioeconomic families than in families with high socioeconomic status.

The current study found a negative correlation between maternal education level, and anxiety and depressive symptoms in adolescence. Higher levels of education was related to less anxiety and depressive symptoms in adolescence. Correspondingly, those adolescents with mothers

with lower level of education were more prone to being bothered with anxiety and depressive symptoms. Fathers' education did not show a correlation with anxiety and depressive symptoms in adolescence. Bøe (2013) refer to that most studies find that parental education levels are generally strongly correlated with internalising problems such as anxiety. However, by inspecting parental education separately for both genders, there was a positive correlation between boys and fathers' education. An explanation to why findings in the present study contradict others' could be due to methodological differences in the studies. For example differences in how the different studies define education level, measurement differences, and controlling for variables such as family characteristics in the analysis. In addition, in the present study there were many missing values for parental education, making the variable less reliable.

The current study found a negative correlation between perceived family income level and anxiety and depressive symptoms in adolescence, and between perceived teacher support and anxiety and depressive symptoms. However, it is not possible to determine what is the cause and what is the effect in these correlations. This thesis is a cross-sectional study and causalities cannot be determined. It is therefore not possible to say that socioeconomic status determines the level of anxiety and depressive symptoms, or that level of teacher support determines the level of anxiety and depressive symptoms. There is uncertainty related to causality due to a high level of complexity as many factors are involved in this relationship. For example, a low level of socioeconomic status is related to higher risk of developing mental health problems, but at the same time there are several factors that could affect this relationship. For example each individual's level of social capital and available resources and health assets.

Relationship between family income and anxiety and depressive symptoms through teacher support

In the present study, the hypothesis "teacher support mediates the relationship between socioeconomic status and anxiety and depressive symptoms" was confirmed.

One of the aims in the current study was to investigate whether teacher support mediated the relationship between socioeconomic status and anxiety and depressive symptoms in adolescence. It was examined whether the possible mechanism in which teacher support could explain the association between perceived family income and level of anxiety and depressive symptoms in adolescence. As expected, higher levels of perceived family income in adolescence predicted reduced level of anxiety and depressive symptoms. Also, a higher level

of perceived family income predicted an additional reduction in level of anxiety and depressive symptoms when teacher support was added to the equation. Thus, the current study suggests that there is a source-specific mechanism underlying the relationship between perceived family income and anxiety and depressive symptoms related to teacher support. It is plausible to state that the relationship between family income and anxiety and depressive symptoms in the adolescents, was mediated through teacher support. The question is then, why?

According to Rønning and Starrin (2009), the most vulnerable people in society are those with both low socioeconomic status and low human capital. The authors suggest that, for this group of people, social capital may be the most important resource to emphasising to increase their empowerment and control of their own situation. It is possible that the findings in the present study indicate that lower socioeconomic status correlated with a higher level of anxiety and depressive symptoms, and that those adolescents with lower socioeconomic status who also reported higher levels of teacher support, experience less anxiety and depressive symptoms compared to adolesents with lower socioeconomic status who also reported low levels of teacher support.

Study strengths and limitations

There are both strengths and limitations in the present. The following section will highlight the study strengths and point out suggestions for improvements.

Method

A quantitative method was chosen to investigate the study hypothesis, as it was considered as the most appropriate approach for this thesis. A quantitative method is appropriate when investigating associations between socioeconomic status, teacher support and mental health in adolescence. Further, the method is adequate for documenting the descriptive statistics and stating what is representative for this specific study population. Alternative methods could have been to use a mixed method approach, where both quantitative and qualitative methods are mixed. Valuable information regarding the adolescents' feelings and thoughts would contribute with valuable information in the study.

Number of participants

The number of participants in the study is high. This is considered as a strength of the study and it contributes to higher study sample representativeness, meaning that the study population represents other adolescents that were not included in the study. The schools that were included, were chosen on background of own interest. This means that the findings could be different if the schools that were allocated randomly from all upper-secondary schools in Norway. Generalizability may thus be reduced in the present study.

A high number of study participants may also cause statistical significant results, even though the associations are very small. It is therefore important to evaluate the effect size and not just conclude that there is a significant relationship between two variables.

Other ways to investigate adolescent anxiety and depressive symptoms

The current study use one mutual measure for anxiety and depressive symptoms, whereas others refer to two separate measures when assessing these symptoms. There are also some differences regarding to what the studies have investigated, whether it was symptoms or the clinical diagnosis of anxiety and/or depression. It is possible that, when measuring symptoms, that some of the adolescents are actually reporting symptoms of a clinical diagnosis. Due to the variety in measurements used in the literature, it is difficult to compare findings from the present study to previous research. All studies used self-rated reporting.

Other ways to investigate teacher support

Different methods used to study teacher support in adolescence were also discovered. The current study used a self-reporting measure to document the level of teacher support. Others have used a measure of students' perception of teachers' caring, and teachers' perception of students' efforts. Additionally, others used teacher rating alone to measure the teacher student relationship. As with anxiety and depressive symptoms, the variety in measurements used in the literature makes it difficult to compare findings from the present study, to levels of teacher support elsewhere in the literature.

Ethics, permission and consent

The participants in the study were adolescence in 2nd class of upper secondary school aged 16-17. From age 16, adolescents are able to sign the consent form themselves and did not need parental approval to participate in the study.

It is also important to evaluate any potential risk of harm in participating in the study. This is especially important to consider in studies when the study participants are children or adolescence. Some of the questions in the questionnaire might come across as personal to some participants. For example questions regarding anxiety and depressive symptoms, or family economy. It is therefore important to be aware and discuss the possibility that some of the adolescents may not be complete honest when filling out the questionnaire. However, in today's society, there is increasingly openness around mental health, suggesting that the adolescents have been honest in their replies. Sletten and Bakken (2016a) refer to analyses that have investigated such objections, and conclude that this is not the main explanation for the increased levels of anxiety and depressive symptoms in adolescence. Actually, none of the studies provided an acceptable answer to the objections. Further, the author argue that longitudinal cohort studies where several different youth cohorts are followed over time, will contribute with knowledge about what it means when adolescents report increased anxiety and depressive symptoms.

In addition, complete confidentiality for the study participants were stressed in the information letter given to all students in the beginning of the trial. This could contribute to the adolescents feeling that it was safe to join the study, being honest and not afraid that peers would find out what they have answered.

Further, when I received the data file, it was already made anonymously and thus it was not possible to relate the answers back to the study participant. The study anonymity seem to be secure.

Another critical point is whether the adolescents have understood the questions correctly, and that they replied accordingly. The questions seem clear and straightforward, which was confirmed by a high Cronbahs alpha value. A high Cronbacs alpha value imply high reliability in the scales used. This means that there is internal consistency between the questions used within the scale, and that every reply measure the same thing. It can be implied that the participants understood the questions correctly, and that the observed differences were due to actual differences in the study population.

Study implications

A discussion of the study's practical implications will follow in the next section. As the thesis is a part of the master's degree in health promotion and health psychology, is it natural to address the consequences mainly related to these fields.

Implications in the field of health promotion and health psychology

The current study and previous literature show that there is increasingly prevalence of anxiety and depressive symptoms among adolescence. It is important to investigate why this is, and then find the best way to address the problem to promote mental wellbeing in adolescence.

The significant association between low level of perceived teacher support and anxiety and depressive symptoms in adolescence underline the importance of including teacher training in programs designed to prevent development of such symptoms.

Anxiety and depressive symptoms were more prevalent in adolescent girls who perceived their family as having low socioeconomic status. Preventive programs should therefore include actions aimed at girls specifically.

Further, teacher support had a mediating effect on this relationship. The findings from the current study could be used to support that schools are an important arena for health promotion related to mental health. Based on findings from the present study, adolescence from families with low socioeconomic status may need extra support in school. This knowledge is important for teachers and others working with adolescents. If the teachers emphasize the importance of a positive student teacher relationship and support the students, it is possible that it will have a reducing effect on the level of anxiety and depressive symptoms in adolescence.

The most important message for further work to target issues related to anxiety and depressive symptoms in adolescence, is to emphasize the important role that schools seem have as arena in this work. Further, emphasis should be on the teachers' role in this work. Increased awareness about the important effect that they may have in the school environment is vital. I suggest that the theme should be included in the teacher education curriculum.

In a larger perspective, it is important to focus on the whole learning environment where the school can act as a resource for health, well-being and learning rather than acting as a risk

(Samdal et al., 2016). It should be anchored at a higher political level, and not be dependent on each individual teacher. By identifying factors in the learning environment that can stop the rising tendency of anxiety and depressive symptoms in adolescence, this might also affect learning and coping and prevent drop-out from school.

Suggestion for further research

Further research on the group of adolescents that reported both low perceived socioeconomic status and struggling with anxiety and depressive symptoms, is important. Little research exist addressing this specific group. However, findings from the present study contributes to the existing knowledge on the topic.

The adolescents' social skills in relation to anxiety and depressive symptoms would also be interesting to take into consideration. Adolescents struggling with these symptoms might be more difficult to make contact with. If so the teachers' role and how to approach these students, is even more complicated. The effect of gender on this relationship must be addressed.

Furthermore, Sletten and Bakken (2016a, p. 9) refer to other research suggesting that performance-related stress in schools has become an important risk factor for emotional difficulties among young girls over time, but not for boys. The author states that girls feel more stress related to them being expected to be perform well in school, and at the same time they should live up to a traditional women-view of being feminine and attractive.

Further, it would be interesting to investigate teacher support in relation socioeconomic status and anxiety and depressive symptoms by a qualitative methodology. Qualitative data would contribute with a broader insight to why some perceive their teachers as supportive, and others do not. Specific teacher qualities contributing to a positive student teacher relationship may also be found. In addition, important information regarding the adolescents' own opinions about the relationship and what causes what may be obtained.

Conclusion

The study aim was to investigate anxiety and depressive symptoms in adolescence in relation to teacher support, socioeconomic status and gender differences. Study findings showed that

most students (83.9%) did not experience anxiety or depressive symptoms. The rest, 16.1% reported that they experienced such symptoms, with a higher prevalence among girls. Girls were found to report less teacher support compared to boys. Further it was found that adolescents who perceived their teachers as supportive were less affected by anxiety and depressive symptoms. The same observation was made in adolescents who reported high family income, of which they reported lower levels of symptoms. Opposite, adolescents who perceived their teacher as less supportive and reported a lower family income level, were more affected by anxiety and depressive symptoms.

Mediation analysis indicated that perceived family income were associated with anxiety and depressive symptoms trough teacher support. The mediating effect of teacher support on the relationship between perceived family income and anxiety and depressive symptoms are regarded as the most important finding for further investigation. Factors that are likely to be of importance in this relationship are related to gender characteristics, adolescent personal traits, social environment and teacher awareness in schools. There is a need for further research regarding the impact that teacher support may have on the development of anxiety and depressive symptoms in adolescents in families with low socioeconomic status.

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Attachments

Attachment 1. Table with previous studies

Study: Author(s) & Title	Research questions/ Hypothesis	Study design	Findings	Age	Country
Bakken (2017)	National findings	Longitudinal	Higher level of depressive symptoms in girls.	Upper-secondary school	Norway
Colarossi and Eccles (2003)	Are there any gender differences in perceived teacher support and level of depressive symptoms?	Survey Tested if depressive symptoms changed over two-points in time	Teacher support had significant negative effect on depressed mood.	15-18 N=217	USA
De Wit et al. (2011)	Will diminishing teacher support predict an increase in depressive symptoms?	Longitudinal survey design	Association between the slopes for teacher support and the slope (change) in depressive symptoms. No moderating effect by gender.	9th and 10th grade N=2616	Canada
Krane, Ness, et al. (2016)	How do students experience that positive teacher student relationships are developed and promoted?	Qualitative Interviews and focus groups	TSR is a mutual responsibility, communication, teacher must adapt to students' academic and personal needs, kind teachers.	17,9 (mean age) N=17	Norway
LaRusso et al. (2008)	Teacher support produce grater social belonging, which is associated with lower level of depressive symptoms.	Survey	Higher level of teacher support was related to less depressive symptoms	14-22 N=476	USA
Murberg and Bru (2009)	Explored the effect of negative life events and	Longitudinal Survey	Positive association between negative life	16-18 N=198	Norway

	social support on depressive symptoms		events and depressive symptoms. Teacher support might act as a buffer on the relationship.		
Undheim and Sund (2005)	Examine possible predictors of change in depressive symptoms.	Longitudinal survey design	Teacher support predicted level of depressive symptoms in girls.	12-15 N=2465	Norway
Wang et al. (2013)	Impact of teacher student relationship on depressive symptoms.	Non-experimental survey and interview	Significant main effect of teacher student relationship on depressive symptoms. Positive TSR was a protective factor against depressive symptoms.	13-18 N=1400	USA
Yu et al. (2016)	Examined the predictive effect of teacher support on anxiety and depressive symptoms.	Longitudinal survey design	Teacher support reduced anxiety and depressive symptoms.	14,3 (mean age) N=236	China

Attachment 2. Survey questionnaire

5. Kjønn:

(Oppgi kun ett svar)

Jente	Gutt	Annet
❑	❑	❑

15. Hvor god råd har din familie?

(Oppgi kun ett svar)

Svært god råd

God råd

Middels god råd

Ikke særlig god

Dårlig råd

35. Nedenfor er en liste over noen problemer eller plager. Har du vært plaget av noe av dette de siste 14 dagene?

(Oppgi kun ett svar pr. spørsmål)

	Ikke plaget	Litt plaget	Ganske plaget	Veldig plaget
Vært stadig redd og engstelig	❑	❑	❑	❑

Følt deg anspent eller urolig	❑	❑	❑	❑
Følt håpløshet når du tenker på framtida	❑	❑	❑	❑
Følt deg nedenfor og trist	❑	❑	❑	❑
Bekymret deg for mye om forskjellige ting	❑	❑	❑	❑

40. Hva er din fars høyeste fullførte utdanning?

(Oppgi kun ett svar)

❑ Universitet eller høyskoleutdanning av høyere grad (f.eks. master, lektor, advokat, sivilingeniør, lege)

❑ Universitet eller høyskoleutdanning av lavere grad (f.eks. bachelor, lærer, politi, sykepleier, ingeniør, journalist)

❑ Videregående skole

❑ Vet ikke

Annet

41. Hva er din mors høyeste fullførte utdanning?

(Oppgi kun ett svar)

❑ Universitet eller høyskoleutdanning av høyere grad (f.eks. master, lektor, advokat, sivilingeniør, lege)

❑ Universitet eller høyskoleutdanning av lavere grad (f.eks. bachelor, lærer, politi, sykepleier, ingeniør, journalist)

❑ Videregående skole

❑ Vet ikke

Annet

50. Nedenfor står noen flere påstander om dine lærere. Klikk på hver linje for hvor enig eller uenig du er i hver uttalelse.

(Oppgi kun ett svar pr. spørsmål)

	Helt enig	Enig	Verken enig eller uenig	Uenig	Helt uenig
Lærerne mine viser tillit til at jeg kan gjøre det bra i faget	❑	❑	❑	❑	❑
Lærerne mine gir meg valgmuligheter	❑	❑	❑	❑	❑
Lærerne mine oppmuntrer meg til å stille spørsmål	❑	❑	❑	❑	❑
Lærerne mine lytter til hvordan jeg har lyst til å gjøre ting	❑	❑	❑	❑	❑
Jeg føler meg forstått av lærerne mine	❑	❑	❑	❑	❑

Jeg kan være åpen med lærerne mine	❑	❑	❑	❑	❑
Lærerne mine godtar meg som jeg er	❑	❑	❑	❑	❑
Jeg har stor tillit til lærerne mine	❑	❑	❑	❑	❑
Lærerne mine gir meg fullstendige og nøyaktige svar på spørsmålene mine	❑	❑	❑	❑	❑
Lærerne mine gir meg fullstendige og nøyaktige svar på spørsmålene mine	❑	❑	❑	❑	❑
Lærerne mine bryr seg om meg som person	❑	❑	❑	❑	❑

UNIVERSITETET I BERGEN
Det psykologiske fakultet
HEMIL-senteret

INFORMASJON OM SAMTYKKE

Evaluering av prosjektet «Gode psykososiale læringsmiljø bedrer gjennomføring i den videregående skolen»

Kjære foreldre/foresatte,

Vi er en gruppe med forskere fra Universitetet i Bergen, Nordlandsforskning og Oxford Research som har fått i oppdrag av Kunnskapsdepartementet (KD) å gjennomføre en evaluering av ulike tiltak for å bedre gjennomføringen i videregående skole. Målet for evalueringen er å undersøke om tiltakene bidrar til å skape et bedre psykososialt miljø og læringsmiljø på utvalgte videregående skoler. Skolen din har sagt seg villig til å delta i denne studien.

Vi inviterer din datter/sønn til å delta i en spørreundersøkelse. Undersøkelsen har spørsmål om henne/han selv, forventninger hun/han har til det sosiale miljøet i klassen og ved skolen, samt hvordan hun/han opplever skolearbeidet, og hennes/hans relasjon til andre ved skolen.

Spørreundersøkelsen vil bli gjennomført i løpet av en skoletime. Forskere vil være tilstede under gjennomføringen og vil kunne svare på spørsmål. Første spørreskjemaundersøkelse gjennomføres ved skolestart høsten 2016. Deretter vil det gjennomføres en oppfølging våren 2017, 2018 og 2019.

For å bidra til økt kunnskap om gjennomføring i videregående opplæring ønsker vi å se elevenes svar i sammenheng med informasjon om prestasjoner, fravær og eventuelle sluttårsaker. Dette gjøres ved å koble allerede eksisterende registerdata fra fylkeskommunen til svarene fra undersøkelsene. For å kunne følge eleven over tid benyttes et unikt, ikke

identifiserbart idnummer. Dette nummeret vil benyttes av eleven når hun/han svarer på undersøkelsen og til å koble data fra fylkeskommunen til svarene på spørreskjemaet. Datafilen fra fylket vil inneholde unik id, kjønn, studieretning, snittkarakter, fravær og eventuell årsak til frafall. All informasjon vil være anonymt på forskernes hånd. Håndteringen av koblingsnøkkelen vil gjøres av fylkeskoordinator og koblingsnøkkelen vil ikke være tilgjengelig for forskerne.

Det er frivillig for barnet ditt å delta i prosjektet, og all informasjonen som hun/han eventuelt gir fra seg vil være konfidensielt og ikke tilgjengelig for noen andre, inkludert foreldre/foresatte eller hennes/hans lærer. Barnet ditt har mulighet til å trekke seg fra studien på ethvert tidspunkt ved å informere oss direkte eller gjennom læreren. Dette gjelder også dersom du ikke ønsker at vi skal bruke svarene som ditt barn eventuelt allerede har gitt oss.

For at ditt barn skal få bli med i denne undersøkelsen er vi avhengig av ditt samtykke. Ved å gi samtykke til å ta del i dette prosjektet, gir du oss din tillatelse til å bruke svarene fra spørreskjemaet til vitenskapelige arbeid, og eventuelt publisere resultatene i vitenskapelige tidsskrifter, så lenge ditt barns anonymitet blir ivaretatt.

Når evalueringsstudien er avsluttet vil skolen motta en rapport der resultatene fra studien blir presentert. Vi setter stor pris på om du vil la barnet ditt delta i studien. Dersom du har noen spørsmål angående prosjektet, ta kontakt med en av oss.

Studien er meldt til Personvernombudet for forskning, NSD - Norsk senter for forskningsdata AS.

For å gi ditt samtykke, bruk denne lenken;
https://skjemaker.app.uib.no/view.php?id=2216597

eller send en SMS til 97 52 34 27 med svar (ja/nei), skolen ditt barn skal gå på, studieretning, ditt barns navn, ditt barns fødselsdato og ditt eget navn (eksempel «JA, FIRDA, OLA NORMANN, PER NORMANN»)

eller bruk skjemaet under.

Vennlig hilsen

Professor Torill Larsen   Frida Mathisen

Mobil 41 50 11 27   Mobil 97 52 34 27

Prosjektleder, UiB   Prosjektkoordinator, UiB

Samtykke til deltakelse i spørreundersøkelse

Jeg har mottatt informasjon om studien, og   **samtykker ☐ ☐samtykker ikke ☐**

til at

(Barnets navn)

kan delta i spørreundersøkelsen

(Signert av foreldre/foresatte, dato)

Attachment 3. Receipt from NSD