Development of global self-esteem

The transition from adolescence to adulthood

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Dissertation for the degree philosophiae doctor (PhD)
at the University of Bergen

2013

ACKNOWLEDGMENTS

First, I would like to thank my main supervisor, Bente Wold, for her guidance and inspiration. I have learned an incredible amount from her. She has always been extremely supportive and has provided me with opportunities to explore my interests, even though they were not always consistent with the project plan. I also want to thank Bente for the countless interesting and fruitful discussions, enjoyable social events and trips to conferences, and for her great hospitality and motherly care. Getting to know her over the last 10 years has been rewarding, and I hope to keep in touch in the years to come.

I want to thank my cosupervisor, Torbjørn Torsheim, for his encouragement and his many useful suggestions on statistical analysis, and for scaffolding my acquisition of methodological skills.

I also want to thank Oddrun Samdal, because, together with Bente, she invited me into the Social Influence Processes on Adolescent Health (SIPA) research group, which is characterized by high scientific and social quality. During most of the time that I have spent with these people, it has been difficult to separate the scientific component from the social component, and in my opinion, this is a sign of a well-functioning research group.

In addition, I want to thank Ole, Ingrid, Ingrid and Kyrre for their important role as coauthors of the papers in my thesis, and for providing significant contributions and comments. I also want to thank all my colleagues in SIPA and HEMIL for being supportive friends and valuable discussion partners during the work on my thesis. The participants of Junior-SIPA—Ole, Ingrid, Fredrik, Anne-Grete and Anne-Siri—have been especially important to me as my closest peers and colleagues during the last few years. Thank you very much for your friendship, social support and stimulating scientific discussions.

Furthermore, thanks to the Department of Health Promotion and Development and the Faculty of Psychology at the University of Bergen for funding, administrative support, and providing me with a stimulating work environment during the work on my doctoral thesis. I am also grateful for being able to use the data from the Voksen I år To Tusen study, which is a rich dataset with unique possibilities in terms of interesting research questions, and want to thank the participants who contributed to this study.

I want to thank my parents, Bjørg and Dag, and my brother, Morten, for being the safe base from which I have been able to explore the world without doubting my value as a person. You have always been standing by and ready to help if I needed it. Thank you for your love, which is consistent regardless of what I achieve or do.

Finally, special thanks to my children, Helena and Daniel, for reminding me that having written a PhD thesis is, after all, not what makes me a valuable person.

Tranby, February 2013

Marianne Skogbrott Birkeland

ABSTRACT

The main aim of this PhD thesis was to examine common developmental trajectories of global self-esteem, defined as "a positive or negative attitude toward a particular object, namely, the self", and to study precursors and outcomes of this development. Social relationships are among the most significant and potentially changeable precursors of global self-esteem. Social relationships with important others, such as parents and peers, may shape how adolescents feel about themselves by providing feedback on their lovability and worthiness, and through acceptance in social groups. Furthermore, having high and positive global self-esteem during adolescence may provide an inner security that creates a foundation for making wise life choices and experiencing high life satisfaction in adulthood.

Research questions addressed in the study included the following.

- How does global self-esteem develop during adolescence?
- To what extent can development of global self-esteem during adolescence be predicted by individual and social resources?
- To what extent can global self-esteem during adolescence predict pathways into adulthood?

Method

The three papers were based on the Norwegian Longitudinal Health Behaviour study, a 17 year longitudinal survey study of participants from the age of 13 years to 30 years (N = 1242). Both variable- and person-centered analyses were undertaken; more specifically, latent growth curve modeling, growth mixture modeling and repeated measures latent class modeling.

Main results

For most adolescents in this study, global self-esteem seemed to be high and stable between ages 13 and 23. Although most adolescents reported high and stable global self-esteem, some adolescents reported lower global self-esteem. Lower global self-esteem was associated with lower closeness to parents, although peer acceptance seemed to have a protective effect. Low levels of global self-esteem during adolescence were associated with lower life satisfaction and higher depressed mood during young adulthood but did not have a profound effect on pathways to adulthood. Rather, pathways to adulthood seem to be more strongly related to the socioeconomic status of the adolescents' families of origin.

Conclusions

Most adolescents seem to have positive global self-esteem. The findings indicate that global self-esteem is connected to other indicators of psychological health, but seem not to influence pathways into adulthood or which socioeconomic status the adolescent achieved in adulthood. Furthermore, the present thesis shows that supportive social relationships are associated with having a positive attitude to oneself. These findings are consistent with the view that global self-esteem may be best viewed as an indicator of well-being rather than as having a causal power in itself.

LIST OF PAPERS

I. Birkeland, M.S., Melkevik, O., Holsen, I., & Wold, B. (2012). Trajectories of global self-esteem development during adolescence. *Journal of Adolescence, 35*, 43–54. doi: 10.1016/j.adolescence.2011.06.006

II. Birkeland, M.S., Breivik, K., & Wold, B. (in press). Peer acceptance protects global self-esteem against negative effects of low closeness to parents during adolescence and early adulthood. *Journal of Youth and Adolescence.* doi: 10.1007/s10964-013-9929-1

III. Birkeland, M.S., Torsheim, T., Leversen, I., & Wold, B. (resubmitted). Pathways to adulthood and their precursors and outcomes.

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1 INTRODUCTION

1.1 Background

Individuals' perceptions of their own characteristics and value may be central to understanding development of psychological problems, psychological well-being and adjustment. These perceptions are often assumed to be grounded in experiences during childhood and adolescence, and to influence thoughts and feelings in ways that maintain psychological health or psychological problems. Self-esteem may be an important indicator and possible predictor of psychological health for at least two reasons.

First, having a high, true and stable self-esteem is valuable in itself and seems to be strongly related to psychological adjustment, happiness and well-being (Baumeister, Campbell, Krueger, & Vohs, 2003). Based on their extensive literature review, Baumeister et al. (2003) proposed that self-esteem seems to have two benefits: enhanced initiative and pleasant feelings. Thus, people with high self-esteem may be more prone to initiate interactions and relationships, to speak up in groups, and to try harder in response to initial failure, but they may also switch to another strategy if the present seems unpromising. In addition, high self-esteem seems to be associated with high levels of happiness, and may also be associated with higher levels of resilience—in the face of failure and stress, people with high self-esteem may be able to bounce back faster than people with low self-esteem.

Second, self-esteem has been found to have a moderate to strong negative relationship with depression, and it has been proposed that low self-esteem may be a risk factor for developing depression (Orth, Robins, & Roberts, 2008). Because depression is one of the most common diseases, with 15–20% of Norwegian adolescents reporting a considerably high level of

depressive symptoms (Mykletun, Knudsen, & Mathiesen, 2009), it is important to understand how the risk factors develop and influence depressive symptoms.

1.2 Definitions and conceptual overview

1.2.1 Global self-esteem

Self-esteem is a widely used concept in psychological research, and it has been defined in different ways. Each definition is associated with different bodies of research findings, theories and conclusions about self-esteem.

The term "self-esteem" has at least two common meanings, which can be traced back to the roots of psychology. William James proposed that self-esteem is determined by the ratio between success and pretentions (James, 1890). This is a cognitive, mastery-oriented version of self-esteem, based on competence in important arenas. In Norwegian, this kind of self-esteem can be translated as "selvtillit" and may be closely related to the generalization of Bandura's concept of self-efficacy; namely, generalized self-efficacy (Judge, Erez, Bono, & Thoresen, 2002). This form of self-esteem involves goals and the development of skills and other specific behaviors.

The other common meaning of the term "self-esteem" is related to worthiness. Cooley (1909) and Mead (1934) took a symbolic interactionist perspective and viewed the self as a social construction, created through linguistic exchanges (symbolic interactions) with others. According to this perspective, global self-esteem may act as a looking glass where people's perceptions of themselves depend upon their beliefs about how they are perceived by other people ("reflected appraisals"). This may be more closely related to an emotional form of self-esteem, which is often called self-worth, or in Norwegian, "selvfølelse". Rosenberg

defined self-esteem as "… a positive or negative attitude toward a particular object, namely, the self …. High self-esteem … expresses the feeling that one is good enough" (Rosenberg, 1965, p. 60). Furthermore, an individual with high self-worth knows her/his feelings well and is able to use them to guide action (Øiestad, 2009).

Some scholars have proposed that both definitions of self-esteem should be taken into account. Defining self-esteem in terms of competence alone can explain why individuals care about success and failure in personally important areas. However, this kind of self-esteem is contingent upon achievements and may be vulnerable to failures creating fragile self-esteem, and may be accompanied by other negative experiences (Crocker & Park, 2004; Kernis, 2003). On the other hand, defining self-esteem in terms of worthiness alone may also be questionable, because feeling good about oneself may not always be favorable. For example, high feelings of worthiness may involve pride, egotism, arrogance, honor, conceitedness, narcissism and a sense of superiority, which may not be regarded as favorable (Mruk, 2006). Therefore, some scholars have proposed that these two meanings of self-esteem can be viewed as two interrelated but separate parts of the self-system and have proposed a two-factor model with self-competence and self-worth as two concepts that should be viewed together (Mruk, 2006; Tafarodi & Swann, 2001). This definition specifies that there is a connection between what individuals do and how they feel about themselves, and Mruk (2006) proposed that this definition may actually entail a three-factor model of global self-esteem: competence, worthiness and the relationship between them. Furthermore, self-competence and self-worth may sometimes by difficult to separate completely from each other, because people may try to develop competencies in activities that give them self-worth (Strecher, Devellis, Becker, & Rosenstock, 1986).

However, the focus of this thesis is the aspect of worthiness, and Rosenberg's definition. He defined self-esteem as an attitude, and like other attitudes, self-esteem can involve positive or negative cognitive, emotional and behavioral reactions. Thus, self-esteem, as it is defined in the present thesis, can be regarded as a continuum from negative (low) to positive (high) and may both influence, and be influenced by, thoughts, feelings and actions that may have effects on further life directions.

Being worthy or unworthy may be thought of as a universal characteristic or as area specific. Some researchers have focused on subconcepts of self-evaluations in multiple domains (Harter, 1999, 2012). In this view, people may have different levels of self-esteem in different areas; for example, high athletic self-esteem and low social self-esteem. However, these specific self-evaluations may have limited value for general well-being. In this thesis, the focus is on the overall and global evaluation of one's worth, and therefore, the term "global self-esteem" will be used.

1.2.2 Adolescence and young adulthood

Adolescence is defined as the transitional period between childhood and adulthood. It starts with the biological changes related to puberty and ends with the transition to adult status (Goossens, 2006). Because these changes happen at different ages for different individuals, the age boundaries are somewhat flexible. Goossens (2006) defined adolescence as the time span between ages 10 and 22, but in this thesis, the term adolescence refers to the time span approximately between ages 13 and 23.

Societal changes in the Western world have encouraged adolescents to prolong their education and to postpone family establishment. Arnett proposed that the period between

ages 18 and 29 is characterized by relative independence from social roles and normative expectations, which makes it possible for older adolescents to explore different directions of life (Arnett, 2000; Tanner & Arnett, 2011). Arnett views this period as a separate universal developmental stage, which he termed “emerging adulthood”.

Others have argued that not all 18–29-year-olds, not even within Western countries, have opportunities to explore different life directions (Kloep & Hendry, 2011). Because of, for example, economic reasons, some 18–29-year-olds may be obliged to take on adult responsibilities and to support themselves and their families. Other 18–29-year-olds may be forced to remain within their parents’ household because they do not have access to higher education or a well-paid job. Thus, one can question whether all young people go through a phase of exploration of different life opportunities, and consequently, whether emerging adulthood is a universal developmental stage (Kloep & Hendry, 2011). Therefore, the term “emerging adulthood” may not be descriptive of a stage that applies to all adolescents. Instead, in this thesis, the term “young adulthood” will refer to the time span approximately between ages 23 and 30.

1.2.3 Overview of the thesis

The main focus of this thesis was to examine the development of global self-esteem during adolescence and young adulthood, and the predictors and outcomes of different developmental trajectories. Paper I sought to describe some of the most common developmental trajectories of global self-esteem between ages 14 and 23 and examined whether low or high levels of body image, physical activity, socioeconomic status, closeness with parents (parent relationships) and peer acceptance (peer relationships) at age 13 preceded these trajectories, and to what extent the trajectories predicted low or high levels of

depressed mood, insomnia, somatic complaints, life satisfaction and socioeconomic status at age 30. Paper II focused on closeness with parents and peer acceptance, and studied, in more detail, how they interacted in their associations with global self-esteem development. In Paper III, common pathways to adulthood in Norway were described, and the importance of global self-esteem for these pathways was explored. Figure 1 shows the overall model of this thesis, and the concepts studied in each paper.

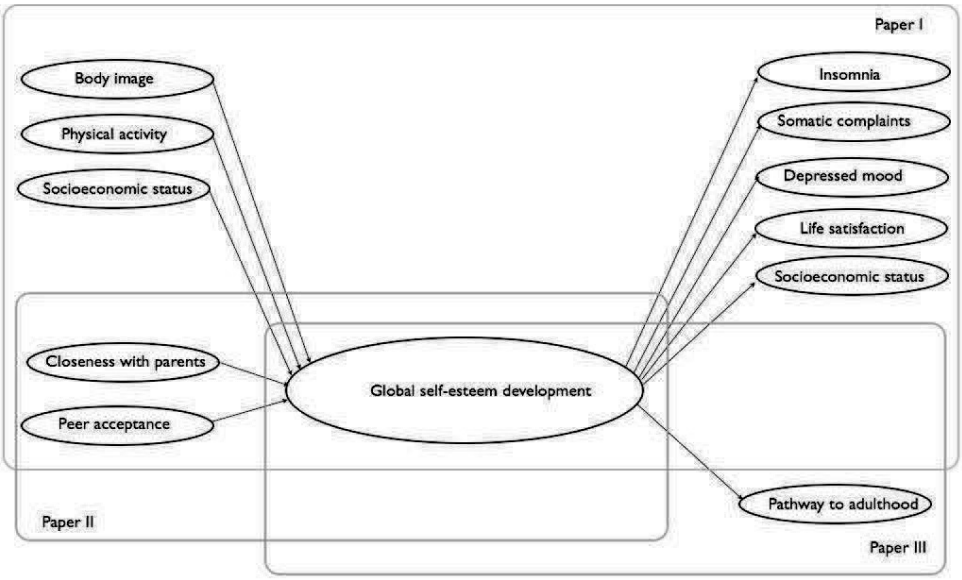

Figure 1. The overall conceptual model for this PhD thesis

1.3 Development of global self-esteem

1.3.1 Adolescence—a period of low global self-esteem?

According to the "storm and stress" perspective on adolescence, most individuals experience a period of emotional turmoil during adolescence (Hall, 1904). This emotional turmoil may also involve a period of low global self-esteem. Hall based his theory on the now discredited idea that the development of the species is recapitulated in the development of the individual. According to this idea, adolescence is characterized as emotional upheaval that corresponds to a period in the development of the human species where higher emotions such as reason, morality, religion, sympathy and love were developed and gained ground. Later, Anna Freud elaborated further on this idea; she saw puberty as a period of increased activity of the drives and regarded a period of storm and stress during adolescence as normative for all adolescents (Freud, 1971). According to her view, adaptive functioning as an adult depends on a period where the sexual drives and defense mechanisms are recapitulated and integrated into their developing personality. The view that adolescence is characterized by storm and stress may still be prominent today, and many adults think that adolescence is a time in the life course that is especially difficult (Buchanan & Holmbeck, 1998) and dominated by raging hormones (Buchanan, Eccles, & Becker, 1992) and insecurities related to identity (Kroger, 1999), which may also involve low global self-esteem.

Harter combined James' and Cooley's ideas about competence and social approval, and tied development of global self-esteem to the processes of cognitive maturation and social growth (Harter, 1999, 2012). According to Harter, younger children are not able to make evaluations of their global self-esteem until middle childhood (approximately 8–11 years), because they cannot yet integrate, summarize and verbalize a concept of their general self-worth. They are

only able to judge their competence or worth in specific domains, and the concept of global self-esteem may not yet be relevant.

Harter proposed that during early adolescence (approximately 11–13 years), young adolescents become capable of taking the perspectives of others, and internalize the attitudes of others toward themselves, which makes a global judgment of overall self-worth possible. Furthermore, they become capable of thinking abstractly, which may enable them to integrate single trait labels such as “smart” and “creative” into the concept of “intelligent”. However, because they lack cognitive control over the abstractions, they may not yet be able to integrate contradictory characteristics of the self. Thus, the abstractions may be quite distinct from one another, and the young adolescents can think about them only as isolated characteristics. This may create unstable and fluctuating global self-esteem.

During middle adolescence (approximately 14–16 years), the contradictive abstractions may be related to one another, for example by recognizing that one might be both cheerful and depressed. However, the adolescent may still not possess the cognitive tools necessary to construct an integrated theory of the self where the personal characteristics are internally consistent. Awareness of inconsistencies may cause considerable intrapsychic conflict, confusion, and distress. To avoid this, adolescents may demonstrate all-or-none thinking, changing frequently from one extreme to another. Furthermore, socialization pressure may contribute to adolescents’ developing multiple selves, and they may behave quite differently in different social settings. This search for a coherent self may be followed by a preoccupation with how they appear in the eyes of others. Conflicts between different parts of adolescents’ social worlds, such as parents and peers, may be problematic and may create confusion, uncertainty and indecision, which may be related to low global self-esteem.

According to Harter, global self-esteem declines between early and middle adolescence (Harter, 2012), which may be related to increased levels of introspection and awareness of differences between one's real and ideal self-concepts.

By late adolescence (approximately 17–19 years), adolescents may be able to construct higher-order abstractions that represent solutions for developing a more integrated theory of self. For example, being extroverted at some times and introverted at other times may be integrated by the higher-order abstraction that one is "flexible" across social situations. In addition, inconsistencies in the self may be normalized by thinking that it is appropriate to display different characteristics in different situations. Furthermore, by discounting the importance of domains in which one is not successful, the discrepancy between the real and ideal self-concepts may be reduced. Internal conflicts may be reduced, and the level of global self-esteem may improve as the adolescent moves into late adolescence (Harter, 2012).

Thus, according to the storm and stress perspective, and to Harter's developmental theory of global self-esteem, one might expect that the levels of global self-esteem may decrease during early adolescence, may be low during middle adolescence, and may increase during late adolescence.

1.3.2 Empirical studies of stability and change in global self-esteem during adolescence

There are different ways to assess stability and change in global self-esteem within longitudinal studies. Some longitudinal studies have examined mean-level stability, which refers to assessment of the average level of global self-esteem at each age, and then compared these group levels to determine the magnitude of change. However, assessing

changes only in mean levels may fail to detect whether some individuals experience increasing global self-esteem and others experience decreasing global self-esteem. Therefore, some longitudinal studies have also assessed rank-order stability of global self-esteem, which describes the consistency of rank ordering across time. High correlations between global self-esteem measured on different occasions indicate that the individual's relative position remains consistent across time.

Huang (2010) completed a meta-analysis of studies that examined mean-level change in global self-esteem and found a slight increase from childhood to age 18, and a moderate increase in college years and young adulthood. Furthermore, Trzesniewski, Donnellan and Robins (2003) did a meta-analysis of studies investigating the rank-order stability of global self-esteem and found that the rank-order stability of global self-esteem increased from childhood to young adulthood. This high differential stability means that individuals changed only slightly or that each individual changed in similar ways. Neither of these meta-studies found any gender differences in the development of global self-esteem. Combining these results may lead to the conclusion that global self-esteem seems to increase during young adolescence but then stabilizes during young adulthood.

However, none of these studies has taken into account the fact that there may be differences between individuals in their stability of global self-esteem. Harter and Whitesell (2003) found that some individuals reported stability in global self-esteem across time and situation, whereas others reported change. In addition, Kernis (2003) argued that instability of global self-esteem may be viewed as a separate characteristic that may differ across individuals. Furthermore, a study that used growth curve modeling to examine development of global self-esteem during adolescence found that the mean level of global self-esteem changed in a

nonlinear way during adolescence and that these changes varied significantly among individuals (Baldwin & Hoffmann, 2002).

Recently, advances in statistical methodology, such as cluster analyses and mixture modeling, have provided opportunities to test new hypotheses about development. Rather than being restricted to testing variable-centered hypotheses such as "global self-esteem increases during adolescence", cluster analyses and mixture modeling can explore questions such as "To what degree do individuals develop differently?", "How do normative and nonnormative development of global self-esteem unfold?" and "Can risk factors that predict less favorable trajectories be identified?" These may be called person-centered research questions, and research that aims to answer them may provide more accurate information about how global self-esteem develops, in "average" individuals, and also in subgroups that follow different developmental trajectories.

Three studies have tried to specify the development of global self-esteem within subgroups of adolescents using cluster analyses. Hirsch and DuBois (1991) analyzed longitudinal data from 128 adolescents aged 12–14 and found four subgroups: consistently high (35%), chronically low (13%), steeply declining (21%) and small increase (31%). Zimmerman, Copeland, Shope and Dielman (1997) used a larger sample of 1160 adolescents aged 11–15 and identified four trajectories: consistently high (48%), moderate and rising (19%), steadily decreasing (20%) and consistently low (13%). Finally, Deihl, Vicary and Deike's (1997) study of adolescents aged 12–15 resulted in three subgroups of development: consistently high (47%), small increase (37%) and consistently low (13%). These studies examined quite short periods in early adolescence and cannot contribute knowledge about the development of global self-esteem into adulthood.

1.4 What predicts global self-esteem?

Stability of global self-esteem is related to whether the levels and importance of the relevant predictors change across adolescence. Global self-esteem may change and may, for example, become more positive if the levels or importance of the relevant predictors change across adolescence. On the other hand, global self-esteem may be stable if the levels and importance of predictors are stable.

1.4.1 Social relationships

One of the important predictors of global self-esteem may be the perceived quality of social relationships. Human beings may be inherently social creatures with a need to belong (Baumeister & Leary, 1995). People seem to need social attachments that provide frequent, nonaversive interactions within an ongoing relational bond. One definition of social relationships is "… ongoing patterns of interactions that involve affectively strong bonds between individuals and considerable interdependence, such as romantic and marital relationships, friendships, and parent–child relationships" (Aron, 2003, p. 442). These social relationships may also provide individuals with social support and opportunities to achieve social competence. High-quality social relationships may manifest themselves in high levels of perceived closeness and available support.

Relationships may shape how positively or negatively one feels about oneself. This may start when infants and parents establish close bonds during the first months of the infants' lives. Psychodynamic theories strongly emphasize the relationships between child and mother, and assert that the quality of the mother's response to both the child's wishes about care and the child's attempts of mastery are important for the child's development of positive and stable feelings about herself or himself (Stern, 1985; Sullivan, 1953; Winnicott, 1958).

Attachment theory (Bowlby, 1969) supports this view and proposes that people seek attachment with others to regulate emotional distress and to experience a sense of security. When the attachment system is activated, people seek protection and comfort from the primary caregivers. Based on interactions with primary caregivers, children develop an internal working model of the self and others that influences emotion regulation, behavior and development of personality. Children and adolescents who experience trust and stability in their relationships with other people, and receive positive, adequate and stable feedback about themselves may perceive themselves as valuable and worthy. Working models of the self are thought to represent beliefs about one's lovability and worthiness of care and attention, whereas working models of others are thought to represent beliefs about how emotionally available and responsive others will be (Bartholomew & Horowitz, 1991). Furthermore, these working models may persist into young adulthood, which may account for stability in global self-esteem.

There is some support for these theoretical propositions. Bartholomew and Horowitz (1991) linked working models of the self and others to attachment styles, and found that adults with attachment styles with positive working models of the self (securely attached and dismissive attached) generally reported higher global self-esteem than those with attachment styles with more negative working models of the self (fearfully attached and preoccupied attached) (Bartholomew & Horowitz, 1991; Mickelson, Kessler, & Shaver, 1997; Mikulincer, 1995).

Attachment theory emphasizes the first relationships to one or two significant others, usually parents. However, attachment theory also acknowledges that other people can serve the same functions and that later attachment figures may counteract negative experiences with earlier attachment figures in a way that may change one's working models of oneself and others. For

example, positive experiences with grandparents, other family members, teachers or adult neighbors may counteract negative experiences with parents. In addition, close friends and romantic partners may be increasingly relevant attachment figures during adolescence and young adulthood, when both parents and peers may fulfill attachment functions (Markiewicz, Lawford, Doyle, & Haggart, 2006).

While attachment theory focuses on attachments to one or two significant others, sociometer theory contributes an explanation of why being connected to social groups may also be important for global self-esteem. Sociometer theory (Leary, Haupt, Strausser, & Chokel, 1998) is grounded in evolution theory and contends that it is adaptive to be accepted and included in social groups. Global self-esteem is thought to serve as an inbuilt "sociometer" that monitors social status, social relationships and other indexes of social behavior that might signalize exclusion. In adolescence, this may be a salient and real threat, because adolescents often organize themselves into high- and low-status cliques or social groups, and to maintain a group's exclusive social status, the group members may reject adolescents who are not judged worthy of being part of the social group (Eder, 1985). Being socially withdrawn from peers during adolescence is found to be associated with low global self-esteem (Hintsanen, Alatupa, Pullmann, Hirstio-Snellman, & Keltikangas-Jarvinen, 2010). According to sociometer theory, low global self-esteem may signalize that the adolescent needs to regulate his/her behavior in a way that increases the probability of being included. Thus, high global self-esteem may indicate that the adolescent is generally accepted, liked and popular. Being accepted in specific social groups with high status is highly valued (Eder, 1985) and is sometimes pursued at the cost of intimate friendships with unpopular peers. In adolescence, perceived popularity may have direct effects on global self-esteem, which are not mediated by the supportiveness of friendships (Litwack, Aikins, & Cillessen, 2012).

Perhaps peer acceptance, in line with sociometer theory, provides adolescents with positive feedback that confirms that they have a safe place in the social group, which may then predict global self-esteem.

Attachment theory and sociometer theory are explanations based on the evolutionary value of being in a social group. In contrast, terror management theory (Pyszczynski, Solomon, Greenberg, Arndt, & Schimel, 2004) takes an existential perspective. According to terror management theory, the function of global self-esteem is to buffer people against the potential anxiety that may arise from their awareness of mortality. Having high global self-esteem, in the view of the proponents of terror management theory, is the feeling that one is an object of primary value in a world of meaningful action. Because having a value is a socially constructed and validated concept, global self-esteem arises by satisfying introjected cultural standards that are approved and valued by other people.

Attachment theory, sociometer theory and terror management theory all propose that social relationships influence global self-esteem, and they provide different reasons for the importance of social relationships in global self-esteem. However, they are less specific about how these processes unfold and about the mechanisms through which social relationships influence global self-esteem.

In addition, the theories do not say how different relationships may work together in influencing global self-esteem and whether they differ in importance across age. The salience of different kinds of relationships may vary at different points in the life-span, and different relationships may have different functions at different points in development (Furman & Buhrmester, 1992). In adolescence and young adulthood, parents and peers are assumed to be

among the most important social relationship partners. Because most adolescents spend decreasingly less time with parents and increasingly more time with peers during adolescence, the level of conflict with parents tends to increase (Laursen & Collins, 2009), the level of closeness to parents may decrease (Seiffge-Krenke & Beyers, 2007) and, because adolescents' concerns with and conformity to peer norms seem to increase (Laursen & Collins, 2009), it is assumed that the importance of peers on global self-esteem may increase and that the importance of parents on global self-esteem may decrease during adolescence. Consequently, low levels of closeness to parents may be more problematic for the global self-esteem of younger adolescents than for older adolescents, who often have intimate relationships with peers to draw social support from.

Some adolescents have poor relationships with their parents. Parents who have problems of their own or are less accessible for other reasons may not be able to maintain close relationships with their adolescents. This may be associated with lower levels of global self-esteem. However, other relationships may protect against the negative effects of distant relationships with parents on global self-esteem through resilience processes. Peer acceptance may have a general protective effect on global self-esteem but may also interact with levels of closeness to parents. Luthar, Cicchetti and Becker (2000) proposed terminology for describing the different protective and interactive effects in resilience processes. For example, peer acceptance may have a protective-stabilizing effect if it buffers the negative effect of the adolescent having a nonoptimal relationship with their parents. Peer acceptance may have a protective but reactive effect if peer acceptance may generally be protective, but this positive effect decreases somewhat as closeness to parents decreases. Finally, peer acceptance may have a protective-enhancing effect if high peer acceptance may allow adolescents to learn from experiences of low closeness to their parents in a way that

increases global self-esteem. Because adolescence is a period when most adolescents spend less time with parents and more with peers, it may be useful to disentangle these effects and to examine how they act together in their associations with global self-esteem.

1.4.2 Physical activity and body image

Global self-esteem may also be predicted by being physically active, through both body image and physical acceptance, and through physical competence (Sonstroem & Morgan, 1989). Several reviews have found that participation in physical activity seems to be related to high global self-esteem (Biddle, Whitehead, O'Donovan, & Nevill, 2005; Seefeldt, Malina, & Clark, 2002; Van der Horst, Paw, Twisk, & Van Mechelen, 2007). Furthermore, an study examining the temporality of participation in physical activity and global self-esteem among young adolescent females found a lagged effect of physical activity on global self-esteem (Schmalz, Deane, Birch, & Davison, 2007). Higher participation in physical activity at ages 9 and 11 predicted higher global self-esteem at ages 11 and 13, respectively. The results provided no support for a lagged effect of global self-esteem on physical activity. This may indicate that participation in physical activity influences global self-esteem, not the other way around.

One of the mechanisms through which participation in physical activity may benefit body image, is through increasing physical competence and physical acceptance, which may make the body image more positive. This may be especially important during adolescence, where the changes in physical appearance due to puberty may be difficult, especially if this happens outside the normative time window for each gender (Alsaker, 1992). Physical appearance or perceived body image seems to be highly correlated with global self-esteem during adolescence—higher than other domain-specific evaluations such as sociability, job

competence, scholastic competence, social acceptance, and athletic competence (Donnellan, Trzesniewski, Conger, & Conger, 2007; Harter, 1999). On the other hand, being dissatisfied with the body seem to be strongly related to negative global self-esteem among adolescents (Van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010).

One reason that physical appearance seems to so tied to the experienced value of the inner psychological self may be that it is always on display for others or for the self to observe (Harter, 1999). From childhood, children who are physically attractive by the societal standards are responded to with more positive attention than those judged to be less attractive, which may lead physically attractive children to develop higher global self-esteem.

1.4.3 Gender

A meta-analysis of 97,121 respondents found that adolescent males reported slightly higher global self-esteem than adolescent females (Kling, Hyde, Showers, & Buswell, 1999). One possible explanation of this difference may be that if body image is one of the main predictors of adolescent global self-esteem, and if adolescent males have a more positive body image than females, then males should also have a more positive global self-esteem. In puberty, males' bodies develop in the direction of the cultural body ideal for men, but females' bodies develop in the direction away from the cultural body ideal for women (Labre, 2002). Furthermore, females may experience higher body shame and body surveillance than males (Knauss, Paxton, & Alsaker, 2008). One hypothesis that may explain this is that females are sexualized to a greater degree in the media; that is, they are portrayed in a sexual manner and objectified more often than males (American Psychological Association, Task force on sexualization of girls, 2007).

As body image seems to be strongly linked to global self-esteem during adolescence (Harter, 1999; van den Berg et al., 2010), this may create a gap between males' and females' mean level of global self-esteem. However, lately, there has also been some evidence indicating that prevalence of body dissatisfaction and its effects on psychosocial functioning may be increasing in adolescent males as well (Hay, Mond, Buttner, & Darby, 2008; Storvoll, Strandbu, & Wichstrøm, 2005).

Furthermore, a study of the extent to which domain-specific self-evaluations related to global self-esteem among males and females found that global self-esteem may be based on different factors across genders (Avsec, 2006). In this study, body image was of greater importance for females' global self-esteem, whereas physical abilities were more important for males' global self-esteem.

Another explanation of the gender differences in global self-esteem is related to gender role socialization. Many characteristics associated with the male gender role are consistent with high global self-esteem. For example, masculinity scores are correlated with global self-esteem scores, whereas femininity scores show a less consistent relationship with global self-esteem scores (Marsh, Antill, & Cunningham, 1987). Males may be expected to assert themselves and to develop high global self-esteem, and females may be expected to develop social skills and to adapt to their social groups rather than expressing themselves.

1.4.4 Socioeconomic status

Socioeconomic status is related to many psychological phenomena and also seems to be associated with global self-esteem (Falci, 2011; Rhodes, Roffman, Reddy, & Fredriksen, 2004; Veselska et al., 2010). Among adults, socioeconomic status may be an indicator of

status within social groups, which may be related to global self-esteem (Twenge & Campbell, 2002). However, socioeconomic status may not be an equally salient source of global self-esteem for all individuals. The socioeconomic status of adolescents is usually inherited from their parents rather than earned by the adolescents. Thus, socioeconomic status may have weaker associations with global self-esteem among adolescents than among adults (Twenge & Campbell, 2002). However, because parents with low socioeconomic status may have less economic and social resources to follow up their adolescents and to support and encourage them, socioeconomic status may still be significantly related to global self-esteem among adolescents.

1.5 What does global self-esteem predict?

1.5.1 Mental and subjective health

Global self-esteem may be related to indicators of mental and subjective health such as life satisfaction, depressed mood, somatic complaints and insomnia. Thinking positively about oneself is adaptive, sometimes even when it is unrealistically positive. Positive self-evaluations, exaggerated perception of mastery and unrealistic optimism are characteristic of normal human thought, and certain delusions may contribute to well-being (Taylor & Brown, 1988). Adolescents who think positively about themselves may believe that they have a higher level of control over their lives and thus be more motivated to work toward the life conditions they wish for. Furthermore, thinking positively about oneself may create a more positive mood that also influences the extent to which adolescents evaluate their life conditions.

Global self-esteem has been found to have a moderate to strong positive relationship with life satisfaction (Lyubomirsky & Lepper, 1999) and a moderate to strong negative relationship with depressive symptoms (Baumeister et al., 2003). Low global self-esteem may contribute to negative mental health through different paths. For example, low global self-esteem may lead to social avoidance and thereby hinder social support (Ottenbreit & Dobson, 2004), which may then lead to lower levels of life satisfaction and higher levels of depressed mood. Furthermore, individuals with low global self-esteem may excessively seek reassurance about their value from peers and relationship partners, which may increase the risk of depression (Joiner, Alfano, & Metalsky, 1992). Individuals with low global self-esteem may also be more sensitive to rejection and may perceive their social relationship partners' behavior negatively and thereby undermine their satisfaction with social relationships (Murray, Holmes, & Griffin, 2000). In addition, low global self-esteem may involve a high level of rumination, which is associated with depressed mood (Kuster, Orth, & Meier, 2012; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), poorer general sleep quality, taking a longer time to fall asleep, and more sleep disturbances (Thomsen, Mehsen, Christensen, & Zachariae, 2003).

Furthermore, low global self-esteem may act as a risk factor that increases the probability of health problems (Orth, Robins, & Widaman, 2012; Stinson et al., 2008). This has also been found among adolescents (Poikolainen, Aalto-Setala, Marttunen, Tuulio-Henriksson, & Lonnqvist, 2000). One explanation of this relationship may be that global self-esteem may be connected to the physiological responses to stressors. For example, low global self-esteem has been found to affect the endocrine stress response (Pruessner, Hellhammer, & Kirschbaum, 1999) and cardiovascular and inflammatory responses to acute stress (O'Donnell, Brydon, Wright, & Steptoe, 2008). A strong physiological response to stress

may be interpreted as a health problem and may create a somatic complaint. In addition, low global self-esteem may be followed by a more negative mood, which may also increase the experience and reporting of somatic complaints (Terwogt, Rieffe, Miers, Jellesma, & Tolland, 2006).

Furthermore, high global self-esteem may also operate as a buffer or resource that enables adolescents to suffer less, to cope better or to recover faster from major life stressors (Baumeister et al., 2003). In line with Lazarus and Folkman's (1984) transactional model of stress, having high global self-esteem may serve as a defense mechanism that promotes life satisfaction by protecting against negative effects from life events. Global self-esteem may influence perceptions of life events and whether they constitute threats or possibilities and may also influence the evaluation of available coping resources. Viewing oneself positively may, according to Lazarus and Folkman, be a very important psychological resource for coping, because it serves as a basis for hope and sustained coping efforts when adverse events occur. This may be especially important during adolescence and young adulthood, when various potential stressors related to changes may arise.

Thus, in the face of stressful events, individuals with low global self-esteem may be prone to depressive symptoms and somatic complaints, whereas individuals with high global self-esteem are able to cope effectively. For example, in the face of stressful situations, adolescents with low global self-esteem may exaggerate their somatic complaints to protect their global self-esteem from further damage. This may even be considered a secondary gain or somatization, where individuals experience and report health problems in the absence of diagnosed physical illness, as a response to psychosocial distress (Keyes & Ryff, 2003; Terwogt et al., 2006).

However, whereas there are studies which have found support for the buffer hypothesis (Baumeister et al., 2003), a longitudinal study by Orth, Robins and Meier (2009) did not find support for the buffering effect of global self-esteem on depression. Rather, the findings suggested that low global self-esteem and stressful events operate as independent risk factors of depression.

Orth, Robins and Roberts (2008) examined the temporal direction between global self-esteem and depressive symptoms during adolescence, as well as the possibility that they are both constructs derived from the broader construct of negative emotionality. They controlled for content overlap between the scales and found that low global self-esteem predicted subsequent levels of depressive symptoms, but depressive symptoms did not predict low global self-esteem. The results were interpreted as supporting a vulnerability model where low global self-esteem may be a risk factor for later depressive symptoms. Furthermore, a meta-analysis of longitudinal data regarding the directionality of relationships between global self-esteem and depression also found that the effect of global self-esteem on depression was significantly stronger than the effect of depression on global self-esteem (Sowislo & Orth, 2012). However, these studies do not allow for strong conclusions regarding the causal influence of low global self-esteem on depressive symptoms, because they do not control for third variables that might simultaneously affect both global self-esteem and depressive symptoms.

With high correlations between the different indicators of mental health, one might question whether these are really discriminable concepts. Lucas, Diener and Suh (1996) tested the discriminant validity of global self-esteem and life satisfaction, and found that they had different patterns of correlations with other variables, which supports the view that global

self-esteem and life satisfaction are in fact distinct constructs. Different correlational patterns were also found in the studies by Diener and Diener (1995) and Lyubomirsky and Lepper (1999). For example, global self-esteem seems to be more strongly correlated with dispositions related to agency and motivation (Lyubomirsky & Lepper, 1999).

1.5.2 Pathways to adulthood and socioeconomic status

Global self-esteem may have a significant role in determining individuals' life paths. The transition from adolescence to adulthood is often defined in terms of five indicators: moving out of the parents' home, completing school, moving into full-time employment, cohabiting or getting married, and becoming a parent. These are regarded as key ecological transitions and can be seen as expected and normative changes to a new role and setting that impose a new set of responsibilities and challenges (Seidman & French, 2004).

Adolescents with high global self-esteem may have secure feelings about their worth as persons, which may enable them to live more authentically and to experience themselves as active agents who can control their environments. Because they are comfortable with themselves and know that they have valuable strengths, they may, to a greater extent, know their characteristic strengths and weaknesses, set realistic goals for themselves and be motivated to work toward them. Thus, having positive global self-esteem may be an important part of being able to navigate toward adulthood.

Clausen (1991) used a concept that is similar to global self-esteem; namely, self-confidence, which he utilized to measure the extent to which individuals are satisfied with the self and the extent to which they are calm and relaxed in manner. Furthermore, he introduced the concept of "planful competence", which he views as the sum of three components: self-

confidence, dependability and intellectual investment. Through having "planful competence", adolescents with high global self-esteem may be able to plan their future strategically rather than drifting through life. Moreover, he proposed that having "planful competence" during adolescence may provide a head start into effective functioning during adulthood. Thinking through career and marital choices, and inhibiting the tendency to make unwise choices, may lead to more favorable outcomes in the longer term.

High levels of global self-esteem may increase the probability of entering pathways with higher demands on academic capability because high self-esteem may lead to more positive expectations of academic achievement and mastery. Adolescents with low global self-esteem may be more prone to adopting self-protective mechanisms, such as withholding effort, or creating circumstances that may act as excuses (Covington, 2000). As a result, low global self-esteem may be associated with low ambitions in education, career and social relationships.

High global self-esteem has been shown to be related to enhanced initiative (Baumeister et al., 2003), which is likely to instigate feelings of control and more opportunities for career choices. Adolescents with low global self-esteem may be more susceptible to finding themselves in unfavorable situations that they did not choose. For example, females with low global self-esteem have been shown to have a higher likelihood of engaging in early sexual behavior (Hipwell, Keenan, Loeber, & Battista, 2010) and may be at risk of early pregnancies.

A study found that global self-esteem was among the strongest predictors of career decision self-efficacy (Choi et al., 2012). Other studies indicate that having formulated ambitions and

a life plan may direct and guide the transition from adolescence to adulthood (Eccles, 2009; Salmela-Aro, 2010). Thus, global self-esteem of different levels during adolescence may be accompanied by entering pathways to adulthood with very different and life-defining characteristics.

Through being associated with different choices related to education and work, global self-esteem may also be related to the level of socioeconomic status in adulthood. Judge and colleagues proposed a model where core self-evaluation traits such as global self-esteem may be related to job performance, job satisfaction and goal attainment, because people with high self-esteem may view a challenging job as an opportunity for attaining mastery, whereas people with low self-esteem may be more likely to view it as an undeserved opportunity or a chance to fail (Judge & Bono, 2001). People tend to choose careers that may allow them to actualize their perceived potential. For people with low global self-esteem, this may lead to lower career aspirations and lower socioeconomic status. Studies have found that high global self-esteem may lead to lower career indecision, higher career-choice readiness, and more positive career developmental patterns (Hirschi, 2011; Saka & Gati, 2007).

1.6 Main research questions

To summarize, it appears that, in general, global self-esteem increases in adolescence but then stabilizes during young adulthood. However, there also seem to be individual differences in trajectories of global self-esteem. There are no previous studies on typical trajectories of global self-esteem during the period between ages 13 and 23 (adolescence and early adulthood), although there are studies on the period between ages 11 and 15 (early adolescence). Thus, there is a gap in the literature describing different patterns of overall development in global self-esteem during the period between ages 13 and 23.

Social relationships, especially with parents and peers, appear to be among the most important predictors of global self-esteem. However, the literature is inconclusive with regard to how these relationships may act together and perhaps interact in their associations with global self-esteem, and whether these processes change character during adolescence. Furthermore, global self-esteem may also be influenced by how adolescents view their bodies, their participation in physical activity, and their gender and socioeconomic status.

Global self-esteem may also influence the choices that adolescents make for their lives and consequently may be related to pathways to adulthood and socioeconomic status. Through these and other processes, global self-esteem during adolescence may also be connected to indicators of psychological health in adulthood, such as life satisfaction, depressed mood, somatic complaints and insomnia.

In the light of the above discussion, the following main research questions were addressed in the present thesis:

- How does global self-esteem change between ages 14 and 23?
- To what extent do socioeconomic status, body image, physical activity, closeness with parents and peer acceptance predict global self-esteem?
- Can peer acceptance protect against the negative effects of low closeness to parents on global self-esteem?
- To what extent does the development of global self-esteem relate to socioeconomic status, life satisfaction, depressed mood, somatic complaints and insomnia at age 30?
- What are the pathways into adulthood among Norwegian women and men, and does global self-esteem predict these pathways?

2 MATERIAL AND METHODS

2.1 Design, procedure and sample

All three papers used data from The Norwegian Longitudinal Health Behaviour (NLHB) study, which is a 17-year prospective cohort study on self-reported health and health behaviors. During autumn 1990, a representative sample of seventh graders (mean age 13.3 ± 0.3) from 22 randomly selected secondary schools, and their parents, in the county of Hordaland in western Norway were invited to participate in the study. The parents of 927 adolescents (78% of the total sample) provided written informed consent. This sample was then followed up nine times through their adolescence and young adulthood. The parents participated in three of the data collections (1990, 1993 and 1996).

During the three first years, data were collected through self-administered questionnaires delivered at school, and in the later years by ordinary mail. During the first data collections at school, any new students were invited to participate, which increased the total number of students who participated at least once to 1242. Table 1 shows numbers of participants at each data collection, as well as a general view of which data collections are used in each paper.

Table 1. Numbers of participants and data used in the three papers

	1990	1991	1992	1993	1995	1996	1998	2000	2007
Age	13	14	15	16	18	19	21	23	30
N	924	958	963	789	779	643	634	627	536
Paper I	X	X	X		X	X	X	X	X
Paper II	X		X		X			X	
Paper III	X			X	X	X	X	X	X

2.2 Measures

2.2.1 Global self-esteem (Papers I, II, and III)

Global self-esteem was measured with a revised version of Rosenberg's Self-Esteem Scale called the Global Negative Self-Evaluations Scale (Alsaker & Olweus, 1986). Rosenberg's Self-Esteem Scale contains both positively and negatively worded items, which are traditionally recoded so that all high scores reflect positive self-esteem and are then added together and sometimes averaged. However, there is now broad agreement that a simple unidimensional one-factor model does not provide an adequate representation of the responses on this scale. One alternative model has the responses representing two factors that are not necessarily correlated; namely, "positive global self-esteem" and "negative global self-esteem". In line with this model, Alsaker and Olweus (1986) reworded all items into a single direction. Because they were interested in difficulties in global self-esteem, a negative wording of all items was judged to be appropriate. In addition, to adapt the scale for use with younger subjects (from 10 years old), some of the items were left out.

The six items that were retained were: "At times I think I am no good at all", "I feel I do not have much to be proud of", "I certainly feel useless at times", "All in all, I am inclined to feel

that I am a failure", "I would like to change many things about myself", and "I have often wanted to be someone else". The response categories ranged from "applies exactly" (1) to "does not apply at all" (6). This scale is comparable to well-known scales of global self-esteem, such as those used by Rosenberg and Harter (Alsaker & Olweus, 1986).

However, the original Rosenberg's Self-Esteem Scale is still widely applied, and the discussion about the meaning of different responses on the positively and negatively worded items has continued since Alsaker and Olweus constructed their scale. For example, in one study, the original Rosenberg's Self-Esteem Scale (five positively and five negatively worded items) was compared with two revised versions where all 10 items were either positively or negatively reworded (Greenberger, Chen, Dmitrieva, & Farruggia, 2003). While the original scale fitted a two-factor model (one positive factor and one negative factor), the other two fitted a one-factor model. However, the two revised versions showed extreme similarity with respect to associations with other variables such as parental warmth and life satisfaction. The generally high construct validity led the authors to conclude that the positively and negatively worded versions tapped into the same dimension of self-esteem. However, one exception was that the negatively worded scale correlated higher with depression measured with the Center for Epidemiological Studies Depression Scale (CES-D), which is not surprising as 16 of the 20 items in this scale are worded negatively. Another study also found that there were associations between negatively worded factors across different content areas (e.g., self-esteem, school attitude, and locus of control) and time (Horan, DiStefano, & Motl, 2003), which may indicate that the wording effects in survey instruments can be considered to reflect response styles. Furthermore, Marsh, Scalas and Nagengast (2010) tested three different interpretations of the poor fit of the one-factor model of Rosenberg's Self-Esteem Scale: 1) there are two factors, one negative and one positive, 2)

there is one trait factor and several ephemeral method artifacts associated with positively or negatively worded items, and 3) there is one trait factor and a stable response-style method factor associated with item wording. Longitudinal models provided good support for the latter interpretation, meaning that positive and negative items tap into the same self-esteem factor but that differently worded items are subject to different response styles.

For the measure used in the present thesis, this may mean that the negatively worded items from Rosenberg's Self-Esteem Scale do tap into a general global self-esteem construct, rather than just the negative side of it. Having all items written in the same direction implies that response style will not contaminate the responses in such a way that the participants' answers will be less consistent as a result of differential wording.

Alsaker and Olweus used the term "global (negative) self-evaluations" rather than "global self-esteem" when they named their scale. In this field, there are a variety of concepts that relate to each other in complicated ways (e.g., self-concept, self-worth, self-confidence, self-efficacy, domain-specific self-evaluations as well as self-esteem), and it seems that the term "global self-evaluation" was chosen to emphasize the global and evaluative aspect of the self. However, this term has seldom been used in the literature. Instead, the term "global self-esteem", reflecting the same concept, is more common (see e.g., Harter, 2012). Thus, in the present thesis, the term global self-esteem is used.

In Paper II, measurement invariance analyses were undertaken to examine how this measure worked across gender and time. It is recommended that this should be done before testing for differences in means of latent constructs between groups or time points (Dimitrov, 2010; Widaman, Ferrer, & Conger, 2010). In the present thesis, metric invariance (equal factor

loadings across gender/time) and scalar invariance (equal item intercepts across gender/time), often referred to as weak and strong measurement invariance, respectively, were tested. The measurement invariance analyses suggested that the measure of global self-esteem did function differently across groups, especially across time. In Paper II, this was taken into consideration. Measurement invariance of global self-esteem was not taken into account in Paper I, and this issue was not relevant to Paper III.

2.2.2 Adulthood indicators (Paper III)

In sociology, having achieved adulthood is often conceptualized as having moved out from the parents' home, left school, started to work full time, married/cohabited and had children. Thus, at ages 16, 18, 19, 21, 23, and 30, the participants were asked: "Who do you live with?" and provided with a list of possible living arrangements. This question measured whether the respondents had left their parents' home and whether they lived with a spouse/partner. At age 16, participants were asked: "What do you presently do in the daytime?", and at ages 18, 19, 21, 23 and 30 they were asked: "What is your current vocational status?", to determine whether they had left school and whether they were working full time (at least 30 hours per week). At age 30, the respondents were asked "If you have children, please write their birth year(s)." These birth years were traced back and coordinated with each year of data collection.

Answers indicating that the respondents had left the parental home, left school, started to work full time, or married/cohabited or had children at the different ages were coded as 1, whereas answers indicating that they had not done these things were coded as 0. Because circumstances change—for example, a person may move back home after living with a

partner—only the current situation was taken into account. The study has no data on marriage/cohabitation at ages 16 and 18.

2.2.3 Socioeconomic status (Papers I and III)

In Paper I, parents' socioeconomic status was measured by the fathers' reports of their income for the previous year. In Paper III, the mothers' reports of their income for the previous year were also used. In addition, responses from both parents on the length of their education were used.

In Papers I and III, two indicators of the participants' socioeconomic status at age 30 were used: the participant's self-reported income in the previous year, and the number of years of education undertaken after upper secondary school. In Paper III, an additional measure was considered: vocational status. Vocational status was estimated by coding the participant's vocation using the Norwegian Standard for Occupational Classification (NOS C 539), which is based on the International Standard Classification of Occupations (ISCO 88). This standard classifies vocations that involve responsibilities or higher education, such as company leaders and academics, as high (10), and vocations that demand little responsibility or education, such as shop assistants and transport workers, as low (1).

2.2.4 Relationships with parents (Papers I and II)

Relationships with parents (closeness to parents) were measured by the Parent–Adolescent Relationship Scale (Alsaker, Dundas, & Olweus, 1991). The items were: "My mother and I understand each other well", "My father and I understand each other well", "My parents praise and encourage me", "There is good cohesiveness in my family", and "I enjoy myself when I am together with my parents." The response categories for three of the items ranged

from “applies exactly” (6) to “does not apply at all” (1), and for the remaining two ranged from “very often” (6) to “seldom or never” (1). The items were added and averaged. Cronbach’s alphas at ages 13, 15, 18 and 23 were .83, .84, .85, and .86, respectively.

2.2.5 Relationships with peers (Papers I and II)

In Papers I and III, relations with peers at age 13 were measured by five items: “I am doing fine with others of my age”, “My peers seem to like me”, “Many of my classmates want to be together with me in the breaks”, “Many of my classmates want to be my friend” and “I think most of my classmates like me.” The six response categories ranged from “applies exactly” (6) to “does not apply at all” (1). The items were averaged, and Cronbach’s alpha was .80.

However, when inspecting the items with confirmation factor analyses, it appears that they can be separated into two groups, one factor tapping into relations with the peer group at school (three items), and one factor tapping into relationships with peers in a more general sense (two items). In Paper II, the more general peer factor (peer acceptance) was considered and measured with the two items: “I am doing fine with others my age”, and “My peers seem to like me.” The items were averaged. The correlations between the two items at ages 13, 15, 18 and 23 were .67, .76, .82, and .82, respectively.

2.2.6 Body image (Paper I)

Body image at age 13 was measured by a four-item scale tapping general satisfaction with body and appearance (Alsaker, 1992). The items included: “I would like to change a good deal about my body”, “By and large, I am satisfied with my looks”, “I would like to change a good deal about my looks”, and “By and large, I am satisfied with my body.” The response categories ranged from “applies exactly” (1) to “does not apply at all” (6). Two of the items

were recoded, so that high scores indicate a positive body image. The answers were averaged, and Cronbach's alpha was .84.

2.2.7 Life satisfaction (Papers I and III)

The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) was used to measure life satisfaction at age 30. The five items are: "In most ways, my life is close to my ideal", "The conditions of my life are excellent", "I am satisfied with my life", "So far, I have gotten the important things I want in life", and "If I could live my life over, I would change almost nothing." The seven response categories ranged from "strongly disagree" (1) to "strongly agree" (7). The responses were averaged, and Cronbach's alpha was .87. The Satisfaction with Life Scale is considered to be a reliable and valid scale for measuring well-being and life satisfaction in Western countries such as Norway (Vittersø, 2009).

2.2.8 Depressed mood (Paper I)

Depressed mood at ages 13 and 30 was measured by a scale developed by Alsaker (1992). The participants were asked to indicate how much they agreed with the following items: "I often feel depressed without knowing why", "Sometimes I think everything is so hopeless that I don't feel like doing anything", "I don't think I have anything to look forward to", "Sometimes I am just so depressed that I feel like staying in bed for the whole day", "I am often sad without seeing any reason for it", "I think my life is mostly miserable", and "Sometimes I think my life is not worth living." The six response categories ranged from "applies exactly" (6) to "does not apply at all" (1). The responses were added together and averaged. The Cronbach's alphas were .82 at age 13, and .92 at age 30. The correlation between this scale and the CES-D measured in 1996 was .72, and refined analysis with latent variables revealed a correlation of .82 (Holsen, Kraft, & Vitterso, 2000).

2.2.9 Insomnia (Paper I)

To measure insomnia, the Bergen Insomnia Scale was applied (Pallesen et al., 2008). The items included were: “During the past month, how many days a week has it taken you more than 30 minutes to fall asleep after the light was switched off?”, “During the past month, how many days a week have you been awake for more than 30 minutes between periods of sleep?”, “During the past month, how many days a week have you awakened more than 30 minutes earlier than you wished without managing to fall asleep again?”, “During the past month, how many days a week have you felt that you have not had enough rest after waking up?”, “During the past month, how many days a week have you been so sleepy/tired that it has affected you at school/work or in your private life?” and “During the past month, how many days a week have you been dissatisfied with your sleep?” The answers were averaged, and Cronbach’s alpha was .80. The scale has shown good psychometric properties (Pallesen et al., 2008).

2.2.10 Somatic complaints (Paper I)

Somatic complaints at age 30 were measured with a checklist that assesses the occurrence of subjective and psychological health complaints; namely, headache, stomachache, back pain, pain in arms or legs, nausea, bad appetite, colds, fatigue, dizziness, diarrhea, and sleeping difficulties. The respondents were asked to indicate how frequently during the preceding three months they had experienced each of the symptoms. The response categories were: “very often” (2), “sometimes” (1), and “rarely or never” (0). The symptoms were summed to a single variable. Studies of similar checklists have shown acceptable validity and reliability (Haugland & Wold, 2001), and Cronbach’s alpha was .75.

2.2.11 Leisure-time physical activity (Paper I)

Leisure-time physical activity at age 13 was measured by asking about the number of times per week respondents performed activities that caused them to sweat or become breathless: "Outside school/work hours, how often do you do sports or exercise until you are out of breath or sweating?" The seven response categories were: "every day" (7.0), "4–6 times per week" (5.0), "2–3 times per week" (2.5), "once a week" (1.0), "1–3 times per month" (0.5), "less than once a month" (0), and "never" (0). The recoded values express the real frequency per week. The frequency of sweat-inducing physical activity correlates well with maximal oxygen uptake, which is a widely used measure of physical fitness (Siconolfi, Lasater, Snow, & Carleton, 1985).

2.3 Missing data

As this was a 17-year longitudinal study, some missing data was expected. To minimize the chance that this might bias the results, it is crucial to try to determine the mechanisms that lie behind missingness in the present study. Rubin (1976) proposed a now nearly universal classification system for missing data mechanisms, which describes the relationships between measured variables and the probability of missing data. Data are missing at random (MAR) when the probability of missing data on a variable is assumed to be related to other measured variables in the analysis model but not to the variable itself or to other unmeasured variables. This means that one assumes that there may be variables in the data set that predict the probability of missing data but that the variable of interest is not related to the probability of missing data. In addition, missingness is assumed not to be influenced by other unknown mechanisms. MAR is often described as "ignorable" missingness; that is, the reason that data are missing is assumed not to be related to the purpose of the study. Data are said to be missing completely at random (MCAR) when the probability of missing data on a variable is

unrelated to both other measured variables and the variable itself. In this case, data are assumed to be missing in a haphazard fashion. Finally, data are missing not at random (MNAR) when the probability of missing data on a variable is related to the variable itself, even after controlling for other variables in the analysis model. There is no way to verify that data are MNAR or MAR without knowing the values of the missing variables. In contrast, it is, in principle, possible to verify that data are MCAR, by testing whether the cases with the missing data and the cases with complete data have the same pattern of means and covariances (Enders, 2010). There are different ways to handle missing data, with listwise and pairwise deletion being the most commonly used. These methods have serious limitations in situations that are not MCAR, and they may produce distorted results when this assumption does not hold, in addition to reducing the power of the analyses (Enders, 2010). Instead, multiple imputation (MI) of missing values and full information maximum likelihood (FIML) missing data handling are considered to be state-of-the art missing data techniques (Schafer & Graham, 2002). These techniques yield unbiased estimates when data are assumed to be MAR. When FIML is used when data is missing under an MNAR mechanism, parameters may be biased. However, the bias tends to be isolated to a subset of the analysis model parameters, whereas the traditional techniques (listwise and pairwise deletion) may propagate bias throughout the entire model (Enders, 2010).

In the present study, the response rate at the last data collection was quite good, considering the duration of the study. Forty-three percent of those who had responded to at least one of the earlier data collections also responded in 2007. The cause of most missing data was wave nonresponse (attrition). During the 17 years, many of the respondents moved, some of them out of the country, and not all of them were contactable. In addition, not all respondents participated at each data collection. To assess selective participation, participation at ages 15,

18, 23, and 30 was regressed on relevant study variables such as global self-esteem, depressed mood, closeness to parents and peer acceptance at ages 13, 15, 18 and 23 (one at a time). None of the variables at age 13 predicted missingness at age 15. Missingness at age 18 was predicted by higher peer acceptance at age 13 but by none of the other variables measured at age 13 or 15. Missingness at age 23 was predicted by higher depressed mood at age 15 and lower global self-esteem at age 18 but by none of the other variables measured at age 13, 15 or 18. Missingness at age 30 was predicted by higher levels of depressed mood at age 23 and lower closeness to parents at ages 18 and 23. Because the missing data seem to be related to the variable of interest, and also to other measured variables, data are not MCAR. Because missing data at ages 23 and 30 seem to be predicted by depressed mood and global self-esteem at earlier data collections, the possibility of data MNAR cannot be rejected. There are ways to minimize possible biases resulting from this situation by specifying a model that accounts for the missing data; for example, selection models and pattern mixture models (Enders, 2010). However, these MNAR models rely on other untestable assumptions that are much narrower than the assumptions for an MAR analysis. Therefore, some methodologists have asserted that a well-conducted MAR analysis may be preferable to an MNAR analysis that is poorly estimated, even when there is reason to believe that missingness is related to the variable of interest (Enders, 2010). Thus, in this thesis, the Mplus 5.2 inbuilt FIML estimation was utilized. All observed information was used to produce the maximum likelihood estimation of parameters.

2.4 Statistical analyses

2.4.1 Longitudinal modeling

Within developmental psychology, the object of interest is change over time. In contrast to concurrent data, longitudinal data allow researchers to study the following issues: 1)

Development in levels (e.g., means) and processes (e.g., correlations) of behavior, 2) Stability of behavior, and 3) Temporal primacy of constructs, which is one of the criteria of causality. Without experimentally induced or removed causes, longitudinal studies are not able to establish causal relationships, but because experiments may often be unethical or impossible, longitudinal data often represent the best approach to evaluating causal relations.

Traditionally, longitudinal studies have studied relationships between variables, and the main aim has been to predict outcomes. Within this approach, it is assumed that relationships between predictors and outcomes are generally the same among all individuals and that variance is normally distributed. This approach has been termed "variable centered" because the focus is on the variables. Examples of variable-centered analyses are regression analysis, factor analysis, and growth curve analysis. In Paper II, the focus of interest is on the relationships between predictors and outcomes, which makes this paper a variable-centered paper.

In contrast, in person-centered approaches, the focus is on relationships between persons, and the goal is to group individuals into categories by similarity (Muthén & Muthén, 2000). Examples of person-centered approaches are latent class analysis (LCA) and growth mixture modeling (GMM). These are often referred to as analyses of mixture modeling. Within this approach, it is assumed that there are individual differences in relationships between variables, and these differences are of interest in the study. In longitudinal studies, this can be viewed as individual differences in development, which may be conceptualized as different trajectories. For example, individual differences may exist in the stability of phenomena across adolescence. If this is the case, it may be of interest to predict qualitatively distinct classes with different pathways and also to examine whether these pathways have different

outcomes. Papers I and III can be said to be an integration of person and variable approaches where the starting point of interest was that there may be different pathways of global self-esteem and transition to adulthood. This constituted the person-centered part of the studies. In the next steps, membership in classes with different pathways was treated as a variable of interest and was used as an outcome and predictor of other variables, which constituted the variable-centered part of the studies.

2.4.2 Latent Growth Curve Modeling (LGM)

In Papers I and II, LGM was used. LGM is one of the most powerful approaches to the analysis of longitudinal data (Bollen & Curran, 2006; Duncan, Duncan, & Strycker, 2006). Within the structural equation modeling (SEM) framework, LGM uses means and covariance structures in the data and: 1) can distinguish group effects observed in means from individual effects observed in covariances, and 2) can distinguish between observed and unobserved (latent) variables, which allows for estimation of measurement error. With LGM, it is possible to estimate both intraindividual and interindividual change. That is, one can describe intraindividual change over time but can also test hypotheses about interindividual differences in intraindividual change. To undertake LGM, two conditions need to be met: 1) each individual has to provide data on three or more occasions, and 2) a minimum sample size of 200 at each time point is required (Boomsma, 1985; Willett & Sayer, 1994). The present study has collected nine waves of data, and the papers in this thesis have used data on global self-esteem from five of them. Furthermore, the sample size ranges from 536 to 963, so both these criteria are considered to have been met.

In Papers I and II, change in global self-esteem was conceptualized as individual differences in both baseline (intercept) and linear and quadratic growth (slopes). The analysis resulted in average growth estimates (fixed estimates) with nonexplained variance (random estimates).

2.4.3 Growth Mixture Modeling (GMM)

In Paper I, GMM (Muthén & Muthén, 2000; Muthén, 2006) was used. GMM can be said to incorporate elements from both the variable-centered analysis, LGM, and the person-centered analysis, LCA.

Traditional LGM assumes that all individuals come from a single population and that one single growth trajectory with normally distributed variance can adequately represent the entire population. However, as heterogeneous growth trajectories may exist within the population, this may be an oversimplification. Consequently, GMM combines LGM with elements from LCA. LCA is a latent variable model where the observed variables are postulated to reflect underlying categorical latent variables and error (Collins & Lanza, 2010). LCA is similar to factor analysis, but where factor analysis often postulates continuous (dimensional) latent factors, LCA postulates a categorical latent factor. LCA can be regarded as a person-centered approach because it searches for subtypes of individuals who display similar patterns of individual characteristics.

In GMM, individuals with similar growth curves are categorized in subgroups. More precisely, GMM allows for differences in growth parameters across unobserved subpopulations and provides different intercept and slope estimates for different subgroups—separate growth curves for each latent class. Furthermore, in contrast to in latent class growth

analysis (LCGA) (Nagin, 1999), individual variation around the mean growth curves in the subgroups is allowed.

Still, it has been argued that GMM is a structure-imposing rather than structure-seeking procedure, and the extracted subgroups may not necessarily be discrete groups (Bauer, 2007; Beauchaine & Marsh, 2006). GMM assumes that the distribution fits with a finite number of normal distributions. It is important to remember that the extracted subgroups may not be qualitatively different classes but may also be viewed as approximations to describe some of the most typical developmental trajectories within a continuum (Johnson, Hicks, McGue, & Iacono, 2007). In this thesis, GMM is used as a systematic approach to explore the extent of heterogeneity, as well as the nature of developmental patterns in global self-esteem.

2.4.4 Repeated Measures Latent Class Analysis (RMLCA)

In Paper III, the transitions into adulthood through five domains were explored. It was expected that these transitions may be discontinuous and that at least some individuals may change role statuses back and forth several times during late adolescence and early adulthood. In GMM, one hypothesizes that change follows a smooth predefined pattern, which did not fit with the expectations for the transitions into adulthood. Therefore, GMM was rejected as an appropriate analysis in this paper. Instead, Repeated Measures Latent Class Analysis (RMLCA) was utilized. RMLCA can be characterized by applying LCA in longitudinal studies to identify latent classes characterized by different patterns of categorical change over three or more time points (Collins & Lanza, 2010). In RMLCA, change over time is modeled in whatever form it naturally occurs in each class, which may be fruitful when changes are expected to be smooth in some classes but may be characterized by

discontinuous changes back and forth in other classes. Thus, RMLCA is particularly useful when change over time is not well represented by any particular functional form.

2.4.5 SEM and model fit

In all the papers, various approaches within the SEM framework were used. This is a confirmatory approach that tests to what extent a hypothesized model is consistent with the data. Among the advantages of SEM, compared with traditional methods, is that it can provide explicit estimates for error variance, whereas alternative methods such as regression assume that errors vanish (Byrne, 2012).

There are a variety of estimators that may be used to estimate parameters in SEM models. In this thesis, the Mplus 5.2 maximum likelihood estimation with robust standard errors (MLR) was used. This estimator is robust for nonnormal data, which is useful when the main variable of interest, global self-esteem, is skewed in the positive direction.

To assess the fit of a hypothesized model to the data, various fit indexes have been proposed. Only a few of them have been applied in this thesis.

2.4.5.1 Model likelihood chi-square (χ^2)

One of the most widely used fit statistics is model likelihood χ^2. If the model likelihood chi-square is 0, the model fits perfectly to the data. A large χ^2, relative to the degrees of freedom, indicates a need to modify the model. Among the disadvantages of this statistic is that χ^2 is a function of sample size, which makes it unrealistic to get good χ^2 estimates when using large

samples. Furthermore, when data are not normally distributed (as in small samples), the statistical significance of the model test will also be distorted (Byrne, 2012).

To avoid some of these problems, χ^2 is used in the computation of alternative model fit indices such as the Comparative Fit Index (CFI), Akaike's Information Criterion (AIC) and the Bayesian Information Criterion (BIC). In addition, when testing nested models, these problems are less prominent. There are three types of alternative fit indexes: comparative/incremental, absolute, and predictive/parsimony-adjusted indices of fit (Byrne, 2012). For incremental fit indexes, a hypothesized model is compared with a more restricted (nested) baseline model, whereas absolute fit indexes assess the extent to which a hypothesized model reproduces the sample data. The category of predictive indices of fit assesses model fit in hypothetical replication samples that are the same size and randomly drawn from the same population as the original sample. Because these indices favor simpler models, they can also be regarded as parsimony-adjusted indexes.

2.4.5.2 Comparative Fit Index (CFI)

CFI is one of the most commonly used incremental fit indexes, and it measures the proportionate improvement in model fit by comparing the hypothesized model in which structure is imposed with the less restricted nested baseline model. Values close to 1.00 indicate a well-fitting model, and a cutoff value close to .95 has been advised (Hu & Bentler, 1999).

2.4.5.3 Root Mean Square of Approximation (RMSEA)

RMSEA is one of the most used absolute indices of fit, and it determines how well the hypothesized model fits the sample data. RMSEA takes into account how well an optimal

model would fit the population covariance matrix if it was available, and it is sensitive to the complexity of the model (degrees of freedom). A value less than .05 represents a good fit (Browne & Cudeck, 1992).

2.4.5.4 AIC, BIC and Sample-size adjusted BIC (SaBIC)

AIC, BIC, and SaBIC may be regarded as predictive/parsimony-corrective indexes of fit, and they compare two or more nonnested models, where the smallest value overall represents the best fit of the hypothesized model (Byrne, 2012). These indicators take into account model fit (χ^2) as the complexity of the model (degrees of freedom), and they assign different levels of penalty according to the complexity and sample size. In the present thesis, these indicators are used when χ^2, CFI, or RMSEA cannot be computed, such as in mixture analyses (Papers I and III).

2.4.5.5 Entropy

In the context of mixture analyses, entropy measures the latent classification accuracy. It ranges from .00 to 1.00, with higher values indicating better classification. Entropy values higher than .80 are viewed as optimal when using the most likely class membership in further analyses (Ram & Grimm, 2009).

2.4.5.6 Lo–Mendell–Rubin Likelihood Ratio Test (LMR-LRT)

The LMR-LRT is a test that is similar to chi-square difference tests, and it is used to compare the relative fit of two models with different parameter restrictions. Generally, two nested models can be compared by calculating negative two times the log likelihood difference. In mixture analyses, these log likelihood differences are not asymptotically distributed, and chi-square cannot be computed. Instead, an approximate reference distribution for the log

likelihood differences is derived, and the difference between the fit of a model with k classes and a model with k–1 classes (one fewer class) is tested (Tofighi & Enders, 2008).

2.4.5.7 A note on fit indexes

It is important to remember than none of these fit indexes, alone or together, can judge the adequacy of a model. These are global fit indexes that may not capture important local misfits. To determine the adequacy of a model, the researcher must build a strong theoretical rationale and then specify the model in the best possible way. The fit indexes will then provide some information on the model's lack of fit. Thus, it is the researcher's responsibility to make sure that the model is indeed adequate.

2.5 Generalizability

Generalizability or external validity is the extent to which the results of a study can be generalized to other populations. Was the initial sample representative of the Hordaland adolescents at the time? The sample was from randomly selected secondary schools in the county of Hordaland in western Norway. Western Norway was (and still is) characterized by some small cities but mostly rural districts with a quite ethnically homogenous population, and differences in socioeconomic status were smaller than in many other societies. The initial sample is considered to be representative of the Hordaland 1977 cohort in 1990.

However, can the results from the Hordaland 1977 cohort be generalized to the adolescents of today? Since 1990, Norway has become a more heterogeneous society in both ethnicity and socioeconomic status. In addition, the Internet may have changed both the range of available social relationships and the way in which adolescents relate to each other. Some have argued that the adolescents of today are more narcissistic and have higher global self-

esteem than previously (Twenge & Campbell, 2001), whereas others have found no evidence of cohort effects on global self-esteem (Donnellan & Trzesniewski, 2010). In any case, there is no reason to believe that the mechanisms behind global self-esteem differ between 1990 and 2012. Global self-esteem may still be related to other psychological constructs because human needs and psychological mechanisms are not likely to have changed during these years. However, the meaning of social relationships for global self-esteem may be different across cultures. For example, family traditionally has a higher value in some cultures in southern European countries than in Scandinavian culture, which is more influenced by the individualist culture of the USA. Thus, global self-esteem may be partly based on cultural sets of values, and the results may not be generalized to different cultures. However, it is considered probable that similar results would have occurred with samples of today's Scandinavian adolescents.

2.6 Ethical considerations

The NLHB study was approved by the Data Inspectorate of Norway and recommended by the Regional Committee for Medical Research Ethics (REK). Both parents and adolescents (who were then aged 13) signed a written consent form to participate in the first three years of the study. From age 16, participants were considered to be capable of making their own decision about whether they wanted to participate.

Furthermore, the researchers work with data files without names or other identifying information, except gender and birth date. In addition, all researchers have signed a declaration of nondisclosure of confidential information.

2.7 A note on the data material

The data used in this thesis were not gathered for the purpose of exploration of development of global self-esteem. Rather, they were gathered for the prediction of health behaviors among adolescents, with a special focus on social determinants of these behaviors. However, the design of the study and the validity and reliability of the measure of global self-esteem are well suited for examination of the development of important well-being indicators during adolescence.

3 RESULTS

3.1 Paper I: "Trajectories of global self-esteem development during adolescence"

The purpose of Paper I was to describe different patterns of global self-esteem during adolescence between ages 14 and 23, and to examine whether the different patterns were preceded or followed by different levels of various indicators of psychosocial health. Based on data from the Norwegian Longitudinal Health Behaviour study, the average development of self-reported global self-esteem was found to be high and stable during adolescence. To elaborate further on this average trajectory, latent growth mixture modeling was used to find the most succinct way to describe development in global self-esteem with several trajectories. Three trajectory classes provided the best model fit, and the classes were termed consistently high (87%), chronically low (6%), and U-shaped with the lowest levels of global self-esteem at age 18 (7%).

The respondents in the consistently high global self-esteem class scored significantly higher on life satisfaction at age 30, and significantly lower on somatic complaints at age 30, than those in the chronically low and U-shaped classes, and all classes reported different levels of depressive mood. These findings indicate that even when there was an improvement in the way that the individuals in the U-shaped class evaluated themselves in their early twenties, they still experienced more negative outcomes at age 30, than those in the consistently high global self-esteem class. A possible implication is that a U-shaped trajectory of global self-esteem during adolescence may have long-term effects. Furthermore, the class with chronically low global self-esteem reported significantly higher levels of insomnia than those in the consistently high and U-shaped classes.

Attempts to predict trajectories from age 13 were only partially successful, with body image, relations with parents and frequency of physical activity as the significant predictors. Gender, socioeconomic status and peer relationships did not discriminate between the classes of global self-esteem development.

The findings suggest that the majority (87%) of the participants experienced high global self-esteem throughout adolescence, and that other trajectories may be associated with negative outcomes in a long-term perspective.

3.2 Paper II: "Peer acceptance protects global self-esteem against negative effects of low closeness to parents during adolescence and early adulthood"

The purpose of Paper II was to examine further the effects of closeness to parents and peer acceptance on development of global self-esteem. Apart from personality characteristics, social relationships were regarded as one of the most influential factors of global self-esteem. In contrast to personality characteristics, social relationships may be improved through parenting and social competence, and therefore, investigating relationships with parents and peers was considered to be fruitful. Some adolescents have distant relationships with parents during adolescence and young adulthood. This paper studied whether peer acceptance can protect against the negative effects of experiencing low closeness in relationships with parents on global self-esteem by using a longitudinal study with data from 1089 Norwegian adolescents between ages 13 and 23 (54% males). A quadratic latent growth curve for global self-esteem, with closeness to parents and peer acceptance as time-varying covariates, was modeled. In this paper, measurement invariance in global self-esteem was tested and taken into account. Descriptive information for the variables used in this paper can be found in section 3.4.

Peer acceptance was found to have a general protective effect on global self-esteem for all adolescents. In addition, between ages 15 and 23 among females and ages 13 and 23 among males, peer acceptance was found to have a small protective-stabilizing effect on the relationship between closeness to parents and global self-esteem. Furthermore, among females at age 13, peer acceptance was generally positive for global self-esteem but less so if closeness to parents was low, a situation where peer acceptance may be termed a protective but reactive factor.

The findings suggest that both closeness to parents and peer acceptance seem to be important for adolescents' and young adults' global self-esteem, and that peer acceptance may have a protective effect on global self-esteem. Furthermore, the results indicate that peer acceptance can, to a certain degree, be an especially valuable source of global self-esteem when closeness to parents is low.

3.3 Paper III: "Pathways to adulthood and their precursors and outcomes"

The purpose of Paper III was to describe the different ways in which contemporary young Norwegian men and women move into adulthood, and to study whether the pathways are preceded and followed by different levels of socioeconomic status and indicators of psychosocial health, such as global self-esteem. Moving out of the parents' home, completing school, moving into full-time employment, cohabiting or getting married and becoming a parent are regarded as key ecological transitions to be engaged in during the transition from adolescence to adulthood.

Repeated measures latent class analysis of 999 individuals from the Norwegian Longitudinal Health Behaviour study indicated three main pathways to adulthood among women and men.

Sixty-five percent of the women and 51% of the men undertook a long period of education and postponed family formation, whereas 16% of the women and 25% of the men started work early. Twenty-four percent of the men neither lived with a partner nor had children at age 30, whereas 19% of women established families with partners and children early.

Coming from a family with high socioeconomic status predicted membership of the "higher-educated men/women" pathway, while low global self-esteem among 13-year-old females increased their probability of entering the "early mothers with partners" pathway. The "higher-educated men/women" and "early working men" pathways were both associated with high life satisfaction at age 30, whereas membership in the "single men" pathway was associated with lower life satisfaction at this age.

These results indicate that low global self-esteem among females may act as a risk factor for being an early mother. Global self-esteem was not related to the pathways to adulthood among males. Global self-esteem did not appear to be strongly associated with whether or not the adolescent entered a pathway to adulthood with a high level of education, started full-time work early or late. Furthermore, the results may indicate that choosing to undertake higher education or to establish families and to start work may both be part of positive pathways in terms of later life satisfaction. On the other hand, living alone and without children at age 30 seems to be associated with lower life satisfaction.

3.4 Additional results

Correlations and descriptive statistics relevant to Paper II can be found in Table 2. As can be seen, closeness to parents and peer acceptance increase slightly across adolescence. In addition, they are correlated with each other and with global self-esteem.

Table 2. Correlations and descriptive statistics for global self-esteem[a], closeness to parents and peer acceptance for males and females between ages 13 and 23

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	Mean	Var
1. Global self-esteem 13		*0.581***	*0.402***	*0.212***	*0.257***	*0.201***	*0.214***	*0.174**	*0.241***	*0.272***	*0.188***	*0.138**		
2. Global self-esteem 15	0.642**		*0.561***	*0.334***	*0.179***	*0.203***	*0.295***	*0.263***	*0.111*	*0.347***	*0.272***	*0.235***		
3. Global self-esteem 18	0.467**	0.748**		*0.453***	*0.205***	*0.159***	*0.447***	*0.263***	*0.130**	*0.265***	*0.437***	*0.284***		
4. Global self-esteem 23	0.351**	0.514**	0.619**		*0.144***	*0.109**	*0.279***	*0.315***	*0.091*	*0.155**	*0.270***	*0.323***		
5. Closeness to parents 13	0.416**	0.344**	0.252**	0.198**		*0.415***	*0.365***	*0.251***	*0.336***	*0.251***	*0.189***	*0.224***	*4.647*	*0.849*
6. Closeness to parents 15	0.375**	0.394**	0.331**	0.161*	0.672**		*0.466***	*0.324***	*0.187***	*0.308***	*0.186***	*0.191***	*4.658*	*0.850*
7. Closeness to parents 18	0.283**	0.335**	0.401**	0.281**	0.523**	0.669**		*0.575***	*0.179***	*0.178***	*0.326***	*0.284***	*4.263*	*1.061*
8. Closeness to parents 23	0.211**	0.248**	0.235**	0.351**	0.342**	0.538**	0.675**		*0.291***	*0.139***	*0.188***	*0.330***	*4.457*	*0.954*
9. Peer acceptance 13	0.296**	0.262**	0.111	0.198**	0.341**	0.237**	0.198**	0.166**		0.416**	*0.273***	*0.227***	*4.631*	*1.012*
10. Peer acceptance 15	0.231**	0.314**	0.218**	0.203**	0.299**	0.275**	0.209**	0.278**	0.365**		*0.432***	*0.257***	*4.683*	*0.930*
11. Peer acceptance 18	0.197**	0.202**	0.357**	0.240**	0.220**	0.260**	0.255**	0.228**	0.204**	0.341**		*0.355***	*4.886*	*0.788*
12. Peer acceptance 23	0.161**	0.188**	0.238**	0.412**	0.111*	0.103	0.278**	0.331**	0.249**	0.282**	0.321**		*4.856*	*0.642*
Mean					4.367	4.316	4.260	4.679	4.454	4.516	4.698	4.743		
Var					1.020	1.241	1.133	1.131	0.831	0.928	0.684	0.681		

Italic type = males, roman type = females

** $p < .01$, * $p < .05$

[a] Descriptive statistics are not provided for the latent variable global self-esteem 13–23 (they are not available when undertaking growth curve analyses).

4 DISCUSSION

The main aims of this thesis were to investigate the development of global self-esteem among adolescents, to explore the importance of individual and social resources, such as social relationships, for global self-esteem, and to assess whether global self-esteem has a lasting effect into young adulthood by influencing the transition to adulthood.

The main findings of this thesis were as follows:

- Most adolescents reported high and stable global self-esteem between ages 13 and 23.
- Higher closeness to parents, body image and physical activity were associated with positive trajectories of global self-esteem.
- Being accepted by peers during adolescence was found to protect global self-esteem for all adolescents but especially when closeness to parents was low.
- Having a period of low global self-esteem during adolescence was found to be associated with low life satisfaction in adulthood, compared with having stable high global self-esteem.
- Among females, low global self-esteem at age 13 increased the probability of establishing a family early but did not influence whether they undertook pathways with higher education or started work early.
- Among males, no associations between global self-esteem at age 13 and pathways to adulthood were found.
- Pathways involving higher education were predicted by coming from a family with high socioeconomic status.
- Choosing to undertake higher education or to establish families and to start work were found to be part of a positive pathway in terms of later life satisfaction, whereas living without a partner at age 30 was associated with lower life satisfaction.

4.1 Development of global self-esteem

Among the strongest contributions of this thesis to the research field is that data from a 17-year longitudinal study was used to predict, describe, and examine the long-term consequences of the most common developmental trajectories of global self-esteem. Previous studies have often used cross-sectional studies to study differences in mean levels of global self-esteem across age, or shorter-term longitudinal studies to study relative stability of global self-esteem over time. Furthermore, the few studies that have examined different trajectories of global self-esteem over time have focused only on early adolescence.

4.1.1 Normative and nonnormative development of global self-esteem

In this thesis, sophisticated statistical data analysis was employed to describe the most common developmental trajectories of global self-esteem during adolescence and young adulthood, and the results indicate that most adolescents seem to have high and stable global self-esteem. Approximately 87% of the sample followed a consistently high and somewhat increasing trajectory of global self-esteem. This confirms results from earlier studies of developmental changes in global self-esteem during adolescence that also suggested that most adolescents feel good about themselves (Huang, 2010; Trzesniewski et al., 2003).

On the other hand, this finding is contrary to the belief that most adolescents have a period of low global self-esteem, predicted by Harter (2012), among others. This belief may be grounded in the assumption that adolescence may be a time of storm and stress (Buchanan & Holmbeck, 1998; Hall, 1904). If there is a universal time of storm and stress during adolescence, adolescents' global self-esteem is also assumed to be affected. However, empirical studies of the actual occurrence of adolescent storm and stress have refuted the

claim that this is a universal process (Arnett, 1999; Offer & Schonert-Reichl, 1992). The present study contributes to the literature on this issue by demonstrating that only a small subgroup of adolescents follows a trajectory of global self-esteem consistent with a storm and stress period. In this subgroup, the lowest global self-esteem was reported around age 18, and not between ages 14 and 16, as predicted by Harter (2012). The low global self-esteem at age 18 may occur because adolescents' cognitive and emotional abilities develop later than predicted by Harter. However, contextual factors may also influence when adolescents report the lowest levels of global self-esteem. In Norway, most adolescents attend secondary high school, which ends at about age 18. After that, they may apply for further education at college universities or universities, or they may leave school and start working. Furthermore, most Norwegian adolescents also move out of their parents' homes at age 18. Having the opportunity to choose, within contextual limitations, what pathways to adulthood to enter, and to be able to influence their own lives to a greater degree from age 18 may be a source of increasing global self-esteem during late adolescence.

The results of the present study are consistent with a small gender difference in the level of global self-esteem, with males having slightly higher global self-esteem than females. This is in line with earlier studies that have found that males report slightly higher global self-esteem than females (Kling et al., 1999). This may be explained by gender differences in body image and/or gender role socialization. Contrary to most previous studies on the development of global self-esteem, which did not find significant gender differences in development of global self-esteem during adolescence (Huang, 2010; Trzesniewski et al., 2003), the present thesis demonstrated a small gender difference in the development of global self-esteem as well. In general, males were found to report a linear, slightly increasing trajectory of global self-esteem throughout adolescence, whereas females in general reported

a slightly decreasing trajectory until age 18, which then increased until age 23. Furthermore, even though gender did not discriminate between the classes of global self-esteem development, there were more females than males in the class with U-shaped trajectory of global self-esteem. The results from this thesis seem to suggest that more females have a period of difficulty related to their global self-esteem around age 18. This may be related to body image issues, which may be more prevalent among females, and females might also be more sensitive to conflicts in social relationships than males.

Given the considerable amount of changes related to this age period, it may be surprising that this trajectory, with a period of low global self-esteem during adolescence, described only about 7% of the sample. One explanation may be that the transitions and changes for most adolescents do not happen at the same time. Coleman developed a focal model of adolescent development, which suggested that for most adolescents, the different changes come into focus successively (Coleman, 1974). This means that most adolescents deal with one issue at a time. Other researchers have subsequently confirmed that adolescents who are confronted with many important life events simultaneously have lower global self-esteem than do adolescents who are confronted with life events one at a time (Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). Simmons et al. (1987) proposed that if adolescents have at least one "arena of comfort" or domain in their lives that is undisturbed, they can deal successfully with the problems that present themselves in other domains of their lives. Mortimer and Call (2001) found that adolescents who had an interpersonal context in which they experienced support from others (e.g., family or peer group) had a higher sense of well-being. About 10% had no arena of comfort, and they reported the lowest level of well-being. In the present thesis, a small subgroup, about 6% of the sample, reported chronically low global self-esteem. They may have had generally low levels of support and resources that did not change

over time. In line with Simmons' (1987) and Mortimer and Call's (2001) propositions, these adolescents may lack an arena of comfort.

4.1.2 Stability of global self-esteem

With the exception of the adolescents with a U-shaped trajectory of global self-esteem, global self-esteem seems to be rather stable throughout adolescence and young adulthood. This may have at least two possible explanations. First, this may suggest that the levels and importance of the most salient predictors of global self-esteem are stable during adolescence and young adulthood. This explanation will be further elaborated in section 4.2. Second, the stability of global self-esteem throughout adolescence may reflect that global self-esteem, as it is measured here, is indeed a stable phenomenon that does not change much. That global self-esteem seems to be rather stable from year to year (Trzesniewski et al., 2003) supports the view that it can be considered to be a personality trait, or at least to have a considerable trait component. Traits are basic personality dimensions that influence how people think and feel about themselves, and are quite stable across time and contexts.

This stable trait-like component of global self-esteem may have a genetic basis. Indeed, studies have found that genetic factors play an important role in the etiology of self-esteem (Neiss, Sedikides, & Stevenson, 2006; Raevuori et al., 2007). Both personality and global self-esteem seem to be moderately heritable, with about 30% of the variance due to genetic differences (Kendler, Gardner, & Prescott, 1998). However, it may be that there are other underlying heritable characteristics that explain the heritability of self-esteem. For example, intelligence, athletic competence and being attractive by current societal standards are all heritable characteristics that may lead both parents and children to have high global self-esteem.

Furthermore, other personality traits may influence global self-esteem through guiding behavior, which influences how people perceive and evaluate themselves. Low global self-esteem seems to be related to other personality traits such as negative affect, because individuals high in this dimension of personality perceive most things negatively compared with individuals lower in this trait (Watson & Clark, 1984). People with high global self-esteem have been found to be emotionally stable, extroverted, conscientious and somewhat agreeable and open to experience (Robins, Tracy, Trzesniewski, Potter, & Gosling, 2001). This may suggest that global self-esteem and personality share common developmental and temperamental roots.

The stable component of global self-esteem may also be strengthened by social cognition processes that may help explain how global self-esteem is maintained over time. It seems that self-views, once derived, tend to persist over time. Studies show that people are motivated to maintain their self-views regardless of whether they are positive or negative (Swann & Seyle, 2006). Stable global self-esteem stabilizes people's behavior, making them more predictable as relationship partners. Furthermore, the self serves as a lens through which the world is perceived and provides the world with meaning. If the characteristics of the self and global self-esteem change, their ability to make sense of the world may be compromised. Therefore, it may be favorable that global self-esteem is quite stable. People with high global self-esteem may arrange their self-perceptions to promote their positive feelings of self-worth (Brown, Dutton, & Cook, 2001). This may be grounded in two processes that govern evaluation of the self and global self-esteem: self-verification and self-enhancement (Sedikides, 1993). People may be motivated to have a congruent self and therefore to seek to verify their existing self-views. In addition, people may be motivated to pursue favorable self-knowledge. Thus, people tend to choose social environments that

confirm how they view themselves—often social environments that view them positively. These cognitive processes may contribute to a stable global self-esteem.

4.2 Global self-esteem seems to be related to mental and subjective health

The results of this thesis suggest that development of global self-esteem during adolescence may be related to indicators of both mental health and subjective health, such as social relationships, body image, and participation in physical activity measured in early adolescence, and life satisfaction, depressed mood, somatic complaints and insomnia measured in adulthood.

In line with attachment theory, sociometer theory and terror management theory, the results obtained in this thesis indicate that social relationships are important predictors of adolescents' global self-esteem. The thesis is, however, not able to determine which of these theories provides the most correct explanation of why social relationships are important for adolescents' global self-esteem.

The results suggest that relationships with both parents and peers are significant contributors to adolescents' global self-esteem. Interestingly, the importance of peer acceptance and closeness to parents did not seem to change throughout adolescence. This is contrary to the hypothesis that the importance of peers increases, and the importance of parents decreases, during adolescence. Even though adolescents often spend less time with their parents than they did when they were children, close and supportive relationships with their parents may still be an important source of positive self-esteem (Mattanah, Lopez, & Govern, 2011; Smetana, Campione-Barr, & Metzger, 2006). Through many years of interaction with their children and adolescents, parents may have already contributed to their children's

fundamental and stable trait component of global self-esteem. In addition, they may also share some of the genetic dispositions for the trait component of global self-esteem.

According to the results of this thesis, being accepted by peers seems to have a stronger association with global self-esteem than does closeness to parents. Peers may provide social support and validation of experiences of uniquely adolescent stressors related to physical and psychological changes. Furthermore, one of the major functions of peers in adolescence may be to support the individuation processes related to developing independence from parents and developing a separate identity, which explains the importance of belonging to a peer group and being accepted by peers (Rubin, Bukowski, & Parker, 2006).

Although the associations of closeness to parents and peer acceptance with global self-esteem seem to be stable throughout adolescence and young adulthood, the absolute levels of both peer acceptance, closeness to parents, and global self-esteem increased somewhat throughout adolescence. Closer inspection of the levels of closeness to parents during adolescence revealed that, as for global self-esteem, mean levels of closeness to parents seem to decrease somewhat at age 18 before increasing. This suggests that the level of social relationships may be reflected in the development of global self-esteem during adolescence and that the stability of global self-esteem may be explained by the stability of social relationships. It may also be the other way around – that the stability of social relationships is explained by the stable trait-like component of global self-esteem. Stable social relationships may reflect positive and suitable working models of other people, and a general social competence based on earlier positive experiences with social relationships, which is also associated with global self-esteem.

This thesis also demonstrated that being accepted by peers seems to have a general protective effect on global self-esteem among all adolescents. In addition, the detrimental effect of having a less close relationship with their parents was smaller among adolescents with high peer acceptance, which suggests that being accepted by peers may buffer against the negative effects of distant relationships with parents on global self-esteem. This relates to the concept of resilience, which encompasses the idea that protective factors may buffer against negative effects of adversity. Resilience may be a useful concept to describe why some adolescents show positive development despite being exposed to adversity. The results of this thesis indicated that feeling accepted by peers may be one of the factors that protects global self-esteem. Being accepted by peers may create a safe place where the adolescent can seek refuge and social support.

However, social relationships with parents and peers may not constitute two different and competing worlds of influence on global self-esteem. On the contrary, Collins and Laursen (2004) assert that relationships with parents and peers become increasingly interrelated during adolescence. They propose that there is a progression from relationships to parents in early childhood, and to expanded social networks with friends in childhood and adolescence, followed by a period with stronger commitments to friends and then romantic relationships. While family relationships are the most important relationships during childhood, gradually other relationships, with friends and romantic partners, come to serve many of the same functions (Collins, Haydon, & Hesemeyer, 2007). This suggests that even though adolescents may be less dependent on their parents, the importance of parents for global self-esteem may not decline.

Other factors were also found to be associated with global self-esteem during adolescence. Both participation in physical activity and body image seem to be associated with higher global self-esteem. This is in line with Sonstroem's theory (Sonstroem & Morgan, 1989), which views physical activity and physical competence as a way to increase body image and global self-esteem.

Having a positive body image at age 13 was among the strongest predictors of entering a trajectory with high and stable global self-esteem during adolescence. Several studies have found very strong associations between global self-esteem and body image; for example, Harter (1993) reported correlations of around .85. This may suggest that adolescents' global self-esteem is mainly based on their assessments of their appearance. However, a high correlation between two self-reported concepts may also be influenced by other phenomena, such as a general tendency to speak well about oneself, or personality characteristics such as positive/negative affect. In fact, other studies found very small associations between objective measures of physical appearance and global self-esteem (Diener, Wolsic, & Fujita, 1995), which indicates that objective physical appearance may not be an important source of global self-esteem. Taken together, these findings may suggest that body image relates to global self-esteem because they are both expressions of how individuals view themselves, which makes the presumed causal relationship from body image to global self-esteem questionable.

The results of this thesis indicate that having high global self-esteem during adolescence may be followed by higher levels of life satisfaction, lower levels of depressed mood, and lower levels of somatic complaints. This is in line with other studies that have found that high global self-esteem is associated with higher life satisfaction (Diener & Diener, 1995;

Lyubomirsky & Lepper, 1999), lower levels of depressive symptoms (Orth et al., 2008, 2009) and lower levels of somatic complaints (Orth et al., 2012; Poikolainen et al., 2000). Adolescents with chronically low global self-esteem tended to report higher levels of insomnia at age 30 than adolescents with consistently high global self-esteem or U-shaped global self-esteem. Furthermore, although adolescents with U-shaped global self-esteem reported levels of the indicators of mental health and subjective health that were in between those reported by the adolescents with stable high and stable low global self-esteem, they were not significantly different from the levels reported by the adolescents with stable low global self-esteem (except for depressed mood). This suggests that there may be long-term consequences of having a period of low global self-esteem during adolescence. This fits with the "scar" hypothesis proposed by Rohde, Lewinsohn and Seeley (1994), which states that a having a difficult period in life can create characteristics that persist after the difficult period has passed.

This thesis was not able to determine whether this association between global self-esteem and various indicators of mental and subjective health could be explained by a direct link between global self-esteem and mental/subjective health, whether global self-esteem acts as a buffer between negative life events and negative effects, or whether this association may be spurious and may be explained by unidentified phenomena such as personality characteristics. Personality characteristics may also explain the relationship between quality social relationships and global self-esteem.

4.3 Global self-esteem seems to be unrelated to socioeconomic status

In the present study, global self-esteem was found to be unrelated to both the adolescents' and their parents' socioeconomic status. The relationships between global self-esteem and the timing and nature of pathways to adulthood were also found to be weak.

That parents' socioeconomic status did not discriminate between the classes of global self-esteem development is contrary to previous studies that have found that socioeconomic status predicted global self-esteem (Falci, 2011; Rhodes et al., 2004; Veselska et al., 2010). However, most of these studies are on adults who may have, at least partly, earned their socioeconomic status. Because adolescents' socioeconomic status is not earned by themselves, there may be a weaker association between socioeconomic status and global self-esteem. Another explanation may be that socioeconomic status may have no further effect on global self-esteem above a particular level and that most Norwegian adolescents have material wealth over this threshold (a ceiling effect).

Global self-esteem at age 13 did not predict membership in any of the pathways to adulthood for males and did not discriminate between females who undertook higher education and those who started to work early. However, for females, low global self-esteem at 13 was associated with a higher probability of becoming an early mother. This is in line with other studies that indicate that females with low global self-esteem are associated with early sexual debut (Hipwell et al., 2010). This may be because adolescence is a period in which social comparisons and the desire for peer approval are salient, and low global self-esteem may lower the ability to resist peer pressure to engage in sexual behavior. Consequently, low global self-esteem may increase the vulnerability to an early sexual debut and sexual risk taking. Furthermore, early sexual debut is associated with lower rates of contraception use

and increased rates of unwanted pregnancy (Albert, Brown, & Flanigan, 2003). This also fits with previous studies that have found that adolescent females with few emotional and social resources tended to start their families quite early (Amato et al., 2008). For these females, pregnancy offers a promise of relational intimacy when few other emotional resources are available (Edin & Kefalas, 2007).

The hypothesis that high global self-esteem during adolescence may lead to pathways with higher education and higher socioeconomic status was not supported by the results of the present thesis. This may seem surprising, as previous studies have found that individuals with high global self-esteem may set higher goals for themselves and may have lower career indecision and more positive developmental patterns (Hirschi, 2011; Saka & Gati, 2007). Thus, it appears that, in Norway, it is possible to achieve an acceptable level of socioeconomic status despite having lower global self-esteem. Perhaps this indicates that people with high as well as low global self-esteem undertake high levels of education and get jobs with high salaries. Being able to resist the pressure to undertake long education pathways when one is not interested may also be considered to be an outcome of high global self-esteem. Early labor force participation may also be a viable career pathway (Mortimer, Vuolo, Staff, Wakefield, & Xie, 2008), actively chosen by work-oriented young adults with little interest or prior success in school.

This result may also indicate that self-reported global self-esteem may not be related to whether adolescents have real abilities that are useful within education, career and work development. For example, some adolescents may have low levels of global self-esteem despite being skillful students. This finding may also be related to the way in which global self-esteem is defined and measured in the present thesis. Perhaps global self-esteem defined

in terms of self-competence (self-efficacy) may be more strongly related to both pathways to adulthood and socioeconomic status than global self-esteem defined in terms of self-worth.

In addition, this finding may be explained by the long time span between the predictor of global self-esteem (age 13) or trajectory of global self-esteem (between ages 14 and 23), and the end point of measurement of adulthood indicators and socioeconomic status (age 30). Influence from global self-esteem may decline each year, and other and concurrent phenomena may have a stronger effect on the timing of adulthood indicators and socioeconomic status.

4.4 What predicts pathways to adulthood?

The findings from the present thesis suggest that global self-esteem has a limited effect on pathways to adulthood among Norwegian adolescents. Rather, socioeconomic status seems to be more influential on which pathway to adulthood the adolescents enter. The results showed that men and women whose fathers had higher education had a higher probability of entering higher education pathways and ended up with higher levels of socioeconomic status at age 30. This social reproduction, where the parents act as models, have resources and advise their adolescents to follow similar pathways to their own, is well established (Croll, 2008). Parents' socioeconomic background may be related to parental aspirations for their children and adolescents, which may further be related to the adolescents' ambitions, career aspirations and educational performance, which may in turn be reflected in adolescents' socioeconomic status when they are adults (Ashby & Schoon, 2010).

The present thesis indicates that these processes may occur even in societies with a supportive welfare system, where it is economically feasible for all adolescents to undertake higher education. This suggests that the nature of the transitions into adulthood may be a product of socialization experiences in which the adolescents internalize the social structure and their family's position within it. Parental economic, social, and cultural capital may influence how their adolescents make transitions in education, work and family establishment, in a way that may be considered to be a reproduction of social inequalities, as suggested by Bourdieu (1984).

Moreover, the findings from this thesis suggest that pathways of both higher education and early working seem to be positive in terms of life satisfaction at age 30. There may be various reasons why some adolescents still choose not to undertake higher education. Some adolescents are not academically prepared for it, but an often overlooked group of adolescents are those who actually have the academic preparation but have other plans. These plans may, for example, include pursuing a career that does not require higher education, starting a family, or simply working and making money (Bozick & DeLuca, 2011). The finding that global self-esteem does not seem to be related to pathways to adulthood may support the hypothesis that a resourceful group of adolescents actively choose such a pathway.

The sizable subgroup (24%) of men classified as "single men" reported significantly lower life satisfaction at age 30. This suggests that, for men, establishing their own families seems to be important for life satisfaction. However, it is important to note that more women than men had established families by age 30, and it may be that women living without a partner reported similar lower levels of low life satisfaction at age 30. However, there were too few

to be identified as a separate class in the analyses. Lehnart, Neyer and Eccles (2010) studied the long-term effects of partnering in young adulthood and found that remaining single for more than eight years was related to decreasing self-esteem, especially for men. In Norway, an increasing number of single men without children has been reported (Skrede, 2005). Because it seems that more men than before stay childless, whereas other men have children with two or more women, it has been suggested that a man's opportunity to establish a family is now more strongly affected by selection among potential partners. In Norway, women are quite autonomous because there are economic support systems for single mothers, and they do not need a man to support them and their children. The social stigma connected with being a single mother is also less prominent today. Thus, women can afford to be more selective when finding a partner. This implies that more men than before may remain unpartnered and may never establish families. As having a partner is an important contributor to life satisfaction (Dush & Amato, 2005), this is an issue to be concerned about.

In summary, the findings from the present thesis suggest that global self-esteem during adolescence is associated with life satisfaction at age 30. However, this association does not seem to be explained by pathways to adulthood. Rather, the results support the view that there may be more than one path to high life satisfaction in adulthood. However, paths involving living with a partner at age 30 seem to be beneficial for life satisfaction at that age.

4.5 The causal power of global self-esteem

The findings from this thesis suggest that global self-esteem during adolescence is associated with high well-being in adulthood. However, to demonstrate causality, three criteria have been proposed: 1) correlation, 2) time sequencing (the assumed cause has to precede the assumed effect), and 3) potential confounders should be controlled for and ruled out. With

longitudinal studies such as this one, it is possible to demonstrate both correlation and time sequencing, but confounding "third variables" may still influence both the assumed cause and the assumed effect. The results of the present study show that global self-esteem may have predictive power of later depressed mood and life satisfaction. It appears that high global self-esteem precedes high levels of life satisfaction and low levels of depressed mood. However, the present study was not able to determine whether it is global self-esteem that affects life satisfaction, or whether some other phenomenon affects the levels of both global self-esteem and life satisfaction.

In the present thesis, personality variables in particular may be relevant as confounding variables that might explain the association between global self-esteem and indicators of mental and subjective health. Personality traits such as positive/negative affectivity or neuroticism may influence how individuals view themselves, their lives, their mood and their health. For example, adolescents high in negative affectivity may provide negative descriptions of both themselves and their life, which create associations between global self-esteem and indicators of mental and subjective health that are not causal. By controlling for confounding phenomena, it is possible to isolate the effect of the predictor of interest from the effects of possibly confounding phenomena. Along these lines, a study of global self-esteem's causal power found that lower self-esteem at age 15 was associated with greater risk of mental health problems and substance dependence, and lower levels of life and relationship satisfaction at ages 18, 21 and 25 (Boden, Fergusson, & Horwood, 2008). However, when potentially confounding factors including gender, depression (age 15), anxiety (age 15), conduct/oppositional defiant disorder (age 15), attention-deficit/hyperactivity (age 15), substance abuse (age 15), suicidal ideation (age 15), attention problems (ages 7–9), conduct problems (ages 7–9), shyness/anxiety (ages 7–9), IQ,

neuroticism (age 14), parental attachment (age 15), maternal age, family living standards, maternal education, socioeconomic status, parental history of alcohol problems, criminal offending and illicit drug use, family changes, sexual abuse, and physical punishment were adjusted for, the strength of these associations was reduced to either moderate or statistically nonsignificant levels, leading the researchers to conclude that the effects of global self-esteem during adolescence on later developmental outcomes were weak and largely explained by the psychosocial context. However, with such a list of confounding factors, one might question whether the researchers have thrown the baby out with the bathwater. Controlling for very similar and contemporaneously measured indicators of mental health might obscure possible causal relationships between variables. Thus, it is important to consider carefully which variables to control for and to ensure that one is not including too many variables that may share variation with the variables of interest, because that might conceal possible interesting associations.

Another way to test whether global self-esteem has a causal effect on other phenomena is to use more objective outcome measures that are not subject to a self-reported "personality bias". For example, it is possible to test whether global self-esteem predicts actual performance in various areas, such as grades. Along these lines, Baumeister, Campbell, Krueger and Vohs (2003) did a comprehensive review of possible subjective and objective outcomes of global self-esteem, and concluded that whereas global self-esteem seems to be associated with subjective performance in various areas, the evidence is mainly based on self-reported correlational data, and global self-esteem cannot be said to lead to higher objective performance. The present thesis' finding that global self-esteem appears to be highly associated with other subjective phenomena, such as closeness to parents, peer acceptance and body image, but weakly associated with more objective phenomena, such as

achieving change in adult role statuses and socioeconomic status, supports Baumeister et al.'s (2003) view that the correlation between self-reported measures of global self-esteem and performance on various areas, social relationships and life satisfaction may be caused by a consistent tendency to speak well or poorly about oneself. Thus, one may claim that the level of global self-esteem permeates all self-reported measures in a way that makes it difficult to disentangle different phenomena from each other and to determine whether there are causal relationships between them.

Other researchers still assert that global self-esteem may have predictive power. Swann, Chang-Schneider and McClarty (2007) criticized Baumeister et al.'s (2003) review for violating the specificity matching principle and argued that when predicting outcomes, it is important that the predictor and the outcome are on the same specificity level. The specificity matching principle suggests that researchers interested in quite specific outcomes (such as academic achievements in e.g., mathematics) should use a specific self-concept (e.g., perceived abilities in mathematics) as a predictor rather than a global measure such as global self-esteem. According to Swann, Chang-Schneider and McClarty (2007), it is not surprising that Baumeister et al. (2003) did not find that global self-esteem predicted any of the specific performance measures. Rather, they assert that domain-specific self-views seem to predict specific outcomes and that global self-esteem seems to predict global outcomes, such as depression and other indices of psychological adjustment. Studies that support this view have found that global self-esteem significantly, but weakly, predicted specific outcomes and more strongly predicted global outcomes (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005; Trzesniewski et al., 2006). Furthermore, Orth, Robins and Widaman (2012) have examined the effects of global self-esteem on life-span trajectories of relationship satisfaction, job satisfaction, occupational status, salary, affect, depression and health, and

have found that global self-esteem had medium-sized effects on life-span trajectories of affect and depression, small to medium-sized effects on trajectories of relationship and job satisfaction, a very small effect on the trajectory of health, and no effect on the trajectory of occupational status. They concluded that self-esteem may be a cause and not a consequence of life outcomes. However, their design was not able to make a strong case for a causal relationship. Thus, although high global self-esteem seems to be followed by high levels of mental and subjective health, and may be a significant predictor for later psychosocial well-being, the evidence for global self-esteem as the causal agent resulting in this psychosocial well-being is not strong.

However, even if global self-esteem is not a causal agent in the life course, it may have a value in itself. It feels good to have high global self-esteem, and that may entail that one is feeling safe and comfortable in oneself and in the social world. According to self-determination theory (Ryan & Brown, 2003; Ryan & Deci, 2000), global self-esteem develops when the three fundamental needs for relatedness, autonomy and competence are satisfied. In their view, low or insecure global self-esteem signifies that need fulfillment is thwarted, and global self-esteem may be regarded as a by-product that develops together with well-being and internal motivation, when the three needs are satisfied. Preoccupation with global self-esteem and how to increase it may, according to Crocker and Park (2004), actually undermine need satisfaction, promote contingent self-esteem that depends on constant reassurance (Ryan & Brown, 2003), and be unstable and fragile (Kernis, 2003). This suggests that global self-esteem may be best viewed as an outcome of healthy development.

In summary, this thesis and other studies suggest that global self-esteem may be an indicator and precursor of well-being rather than a phenomenon with causal power on pathways to

mental health in adulthood. The results from the present thesis are consistent with the view that global self-esteem may not be the driving force behind achievements and life events, such as socioeconomic status and transition to adulthood, but rather that global self-esteem is a quite stable phenomenon that is established before adolescence. Global self-esteem seems to have a personality trait component that may be genetically based, and also a more situational state component that may reflect development in, for example, closeness to parents and peer acceptance during adolescence.

4.6 Strengths and limitations

The present thesis has several strong strengths. Among them is the 17-year longitudinal design. This study covers a long period from early adolescence to adulthood, and the design makes it possible to describe development, as well as examine both predictors and outcomes of various developmental pathways. An additional strength of the thesis is the use of both person- and variable-centered analyses within the SEM framework, which makes it possible to test sophisticated models in order to examine the research questions. The application of these recently developed analysis techniques made it possible to examine interesting research questions in new ways; for example, to describe how subgroups of adolescents may go through different development pathways. Furthermore, the SEM framework also made it possible to take into account the measurement invariance in global self-esteem across gender and age, and to minimize the amount of error associated with the responses on this scale.

A possible limitation may be that global self-esteem is defined only in terms of self-reported worthiness. It could be argued that self-reported measures of global self-esteem do not actually measure the extent to which individuals actually feel positively about their value but rather measure their tendency to speak well about themselves. The measure is not able to

distinguish between healthy and optimal high global self-esteem, and other forms of high global self-esteem, such as narcissism. In addition, the self-reported responses may also be subject to social desirability, and some adolescents may have reported that they feel better about themselves than they really do. In particular, this may be the case for the data collections at ages 13, 14 and 15, which were undertaken during school hours. Furthermore, most of the other measures were also self-reported. However, most of the variables in the present thesis, such as global self-esteem, peer acceptance and closeness to parents, are of such a nature that self-report is a natural choice. What matters most for an individual's well-being is probably the individual's own assessment of, for example, being accepted by peers and having close relationships with parents.

The scale measuring global self-esteem consisted of negatively formulated items, which may not necessarily reflect genuine positive global self-esteem. However, as this scale has yielded results that are generally comparable with results of other studies, and studies have also found that positive and negative items tap into the same self-esteem factor (Greenberger et al., 2003; Marsh et al., 2010), it is assumed that it is a valid measure of adolescents' global self-esteem.

Another possible limitation is related to missing data. During the 17 years, some respondents dropped out of the study or did not provide complete data. This can contribute to less accurate results if not dealt with in a proper way. However, the present thesis used an estimator that require rather relaxed assumptions (FIML) and is regarded as one of the best approaches to the inevitable issue of missing data in longitudinal studies (Acock, 2005).

Furthermore, because some of the analytic techniques employed in this thesis are new and somewhat controversial, the results should be interpreted with caution. This is especially relevant for the GMM approach used in Paper I. This approach has been criticized for being overused with data that violate the underlying assumptions (Sterba & Bauer, 2010) and for extracting multiple trajectory classes even when there is no real taxonomic structure to be found. However, one may argue that GMM may be viewed as a systematic approach to exploring and sorting similar developmental experiences into subgroups, without asserting that these entail mutually exclusive and qualitative distinct patterns of development. Rather, GMM may be used as a way to depict and describe some of the most typical developmental trajectories within a sample. Still, as the subgroups at best only describe approximations, they have to be interpreted with caution.

Most earlier studies on prediction of global self-esteem have used a continuous variable of global self-esteem as the dependent outcome variable. In this thesis, membership in the categorical and nominal variable "trajectories of global self-esteem" serves as the dependent variable. As this variable had only three levels, there is less variation to predict than there would be with a continuous variable having a range from, for example, 1 to 6. It may be more difficult to predict a categorical variable than a continuous variable. For example, although peer acceptance was associated with global self-esteem as a continuous latent variable in Paper II, peer relationships at age 13 did not discriminate between the levels of the categorical nominal variable of different trajectories of development of global self-esteem between ages 14 and 23 in Paper I. In addition, the prediction of class membership as an outcome variable depends on the three-class solution actually reflecting how global self-esteem develops across adolescence. If this solution does not fit the distribution of developmental trajectories of global self-esteem in the sample, class membership may be

unsuitable both as an outcome and as a predictor. Similar issues can be raised for class memberships in Paper III.

Moreover, the study does not address possible important covariates that could have shed light on the associations of global self-esteem and other important indicators of well-being. For example, the study does not address the possible influence of personality variables such as positive/negative affect on either global self-esteem or early and late covariates. Without controlling for these and other possible confounding factors, the causal power of global self-esteem cannot be determined. However, it may be argued that even though global self-esteem probably shares some variance with other phenomena, global self-esteem may still be an interesting concept to explore in itself.

Finally, it is important to keep in mind that the results of this study were based on a representative community sample of individuals from Hordaland County in Norway, who were adolescents during the 1990s. Thus, the generalizability to other populations, such as the American adolescents of today, or to clinical samples, may be limited.

5 CONCLUSIONS AND IMPLICATIONS

5.1 Main conclusion

The present thesis adds to the existing literature on global self-esteem by describing heterogeneous developmental trajectories between ages 13 and 30, and by examining possible predictors and outcomes of the developmental course of global self-esteem. Three main trajectories of development of global self-esteem were found; one high global self-esteem trajectory, one low global self-esteem trajectory, and one with a U-shaped course of development. However, this result needs to be interpreted with caution, and the most prevalent trajectory was the one with high, positive and somewhat increasing global self-esteem during adolescence and young adulthood. Thus, most adolescents feel positively about themselves. The results indicate that global self-esteem is connected to other indicators of psychological health, but seem not to influence pathways into adulthood or which socioeconomic status the adolescent achieved in adulthood. Furthermore, the present thesis shows that having supporting social relationships is related to a positive attitude towards oneself. These findings are consistent with the view that global self-esteem may be best viewed as an indicator of well-being rather than as having a causal power in itself. Consequently, adolescents who feel negatively about themselves may benefit from being identified, but interventions directed towards global self-esteem may not be the most effective way to counteract a negative developmental path. Rather, increasing quality of social relationships may a promising target of intervention, and high quality of social relationships may act as possible sources of a high and positive global self-esteem and a positive developmental path.

5.2 Implications for practice

The results from this thesis demonstrate that it is, to a certain extent, possible to identify adolescents with less favorable trajectories of global self-esteem and pathways to adulthood. By identifying adolescents who may encounter less favorable trajectories, and providing support for social skills and other skills related to coping with life changes, it may be possible to prevent adolescents from entering these more negative pathways.

The present thesis, along with other studies, suggests that social relationships are among the most important sources of global self-esteem. Thus, encouraging healthy relationships by increasing social skills and social networks that may provide social support and experiences of being lovable and valuable may also be followed by high global self-esteem. Furthermore, having a social relationship with a partner seems to be important for adult life satisfaction. By identifying the socioeconomic and structural conditions behind the sizable group of 30-year-old single men and implementing interventions that increase the portion of men with partners, as well as increasing young men's social competence through, for example, intervention programs in school, the number of young men with low life satisfaction at age 30 may be decreased.

The finding that global self-esteem did not seem to have long-term consequences in terms of pathways to adulthood suggests that global self-esteem may not be pursued as the one and only path to success in life. Perhaps global self-esteem has its value mostly in how one feels about oneself in the present. This also indicates that "learning to think positively about oneself" may not be a prerequisite or the starting point of making the most out of one's life. There are no shortcuts to experiencing high global self-esteem, and one may need to go out of one's comfort zone to develop more positive feelings about oneself. Rather, adolescents

who are encouraged to develop real skills, real social relationships, and self-compassion (Neff & Vonk, 2009) may experience high global self-esteem as a result or side effect of a general positive developmental pathway.

5.3 Implications for further research

The results of the present thesis cannot determine whether the association between self-reported global self-esteem and other self-reported indicators of well-being, such as life satisfaction and depression, is the result of a causal relationship, or whether they both reflect a fundamental personality trait. To avoid confusion, one might consider including measurement instruments on personality, at least positive/negative affect. Also, use of objective measures of outcomes whenever possible may provide clearer answers to the question of whether the level of global self-esteem affects important indicators of psychological adjustment.

Furthermore, it is important to emphasize the continuing need for longitudinal studies and the application of analytic techniques that allow individual differences in development to be measured and that can describe how different pathways and trajectories develop rather than providing general statements about a “mean development” that does not cover the wide variety of individual life paths. In addition, qualitative or mixed-method research may supplement the high number of quantitative studies that exist on global self-esteem and may provide opportunities to understand more about the role of global self-esteem in adolescents’ development into adults.

Global self-esteem is a concept that has been on the research agenda for many years, as a predictor, an outcome, a mediator, and a moderator between predictors and outcomes.

Furthermore, the different ways of defining and measuring global self-esteem and related concepts may create confusion and make it difficult to compare results from different studies. Some scholars have rejected the whole concept of global self-esteem altogether, claiming that it is not a useful concept in psychological research (Seligman, 2007). Because global self-esteem also seems to have a value in itself, and because global self-esteem is a phenomenon that Western culture relates to, this may be counterproductive. Rather, carefully defining global self-esteem in each study, and using well-considered research designs that explore how different components of the self-system such as global self-esteem, self-worth, self-competence and self-compassion connect to each other over time, may still continue to increase knowledge about how to support adolescents and adults and to help them to feel comfortable with themselves.

6 REFERENCES

Acock, A. C. (2005). Working with missing values. *Journal of Marriage and Family*, *67*(4), 1012–1028. doi:10.1111/j.1741-3737.2005.00191.x

Albert, B., Brown, S., & Flanigan, C. (2003). *14 and younger: The sexual behavior of young adolescents*. Washington DC: National Campaign to Prevent Teen Pregnancy.

Alsaker, F. (1992). Pubertal timing, overweight, and psychological adjustment. *Journal of Early Adolescence*, *12*, 396–419.

Alsaker, F., Dundas, I., & Olweus, D. (1991, April). *A growth curve approach to the study of parental relations and depression of adolescence*. Paper presented in a Symposium at the Biennial Meeting of the Society for Research on Child Development, Seattle, WA.

Alsaker, F., & Olweus, D. (1986). Assessment of global negative self-evaluations and perceived stability of self in Norwegian preadolescents and adolescents. *Journal of Early Adolescence*, *6*, 269–278.

Amato, P., Landale, N., Habasevich-Brooks, T., Booth, A., Eggebeen, D., Schoen, R., & Mchale, S. (2008). Precursors of young women's family formation pathways. *Journal of Marriage and Family*, *70*(5), 1271–1286. doi:10.1111/j.1741-3737.2008.00565.x

American Psychological Association, Task Force on the Sexualization of Girls. (2007). Report of the APA Task Force on the Sexualization of Girls. Retrieved from http://www.apa.org/pi/women/programs/girls/report.aspx

Arnett, J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist*, *54*(5), 317–326.

Arnett, J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*(5), 469–480.

Aron, A. (2003). Self and close relationships. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 442–461). New York: Guilford.

Ashby, J. S., & Schoon, I. (2010). Career success: The role of teenage career aspirations, ambition value and gender in predicting adult social status and earnings. *Journal of Vocational Behavior*, *77*(3), 350–360. doi:10.1016/j.jvb.2010.06.006

Avsec, A. (2006). Gender differences in the structure of self-concept: Are the self-conceptions about physical attractiveness really more important for women's self-esteem? *Studia Psychologica*, *48*(1), 31–43.

Baldwin, S., & Hoffmann, J. (2002). The dynamics of self-esteem: A growth-curve analysis. *Journal of Youth and Adolescence*, *31*(2), 101–113.

Bartholomew, K., & Horowitz, L. (1991). Attachment styles among young adults: A test of a 4-category model. *Journal of Personality and Social Psychology*, *61*(2), 226–244.

Bauer, D. (2007). Observations on the use of growth mixture models in psychological research. *Multivariate Behavioral Research*, *42*(4), 757–786.

Baumeister, R., Campbell, J., Krueger, J., & Vohs, K. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science*, 4(1), *1*–44.

Baumeister, R., & Leary, M. (1995). The need to belong: Desire for interpersonal attachment as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529.

Beauchaine, T. P., & Marsh, P. (2006). Taxometric methods. Enhancing early detection and prevention of psychopathology by identifying latent vulnerability traits. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology. Volume one: Theory and method*. New Jersey: Wiley.

Biddle, S. J., Whitehead, S. H., O'Donovan, T., & Nevill, M. E. (2005). Correlates of participation in physical activity for adolescent girls: A systematic review of recent literature. *Journal of Physical Activity and Health*, *2*, 423–434.

Boden, J., Fergusson, D., & Horwood, L. (2008). Does adolescent self-esteem predict later life outcomes? A test of the causal role of self-esteem. *Development and Psychopathology*, *20*(1), 319–339. doi:10.1017/S0954579408000151

Bollen, K., & Curran, P. (2006). *Latent curve models: A structural equation perspective*. Hoboken, NJ: John Wiley and Sons.

Boomsma, A. (1985). Nonconvergence, improper solutions, and starting values in Lisrel maximum-likelihood estimation. *Psychometrika*, *50*, 229–242. doi:10.1007/BF02294248

Bourdieu, P. (1984). *Distinction: A social critique of the judgment of taste*. Cambridge, MA: Harvard University Press.

Bowlby, J. (1969). *Attachment and loss: Attachment (Vol. 1)*. New York: Basic.

Bozick, R., & DeLuca, S. (2011). Not making the transition to college: School, work, and opportunities in the lives of American youth. *Social Science Research*, *40*(4), 1249–1262. doi:10.1016/j.ssresearch.2011.02.003

Brown, J. D., Dutton, K. A., & Cook, K. E. (2001). From the top down: Self-esteem and self-evaluation. *Cognition & Emotion*, *15*(5), 615–631. doi:10.1080/02699930143000004

Browne, M., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research*, *21*(2), 230–258. doi:10.1177/0049124192021002005

Buchanan, C., Eccles, J., & Becker, J. (1992). Are adolescents the victims of raging hormones: Evidence for activational effects of hormones on moods and behavior at adolescence. *Psychological Bulletin*, *111*(1), 62–107. doi:10.1037/0033-2909.111.1.62

Buchanan, C., & Holmbeck, G. (1998). Measuring beliefs about adolescent personality and behavior. *Journal of Youth and Adolescence*, *27*(5), 607–627.

Byrne, B. (2012). *Structural equation modeling with Mplus*. New York: Routledge.

Choi, B. Y., Park, H., Yang, E., Lee, S. K., Lee, Y., & Lee, S. M. (2012). Understanding career decision self-efficacy: A meta-analytic approach. *Journal of Career Development*, *39*(5), 443–460. doi:10.1177/0894845311398042

Clausen, J. (1991). Adolescent competence and the shaping of the life course. American *Journal of Sociology*, *96*(4), 805–842.

Coleman, J. C. (1974). *Relationships in adolescence*. London: Routledge.

Collins, L., & Lanza, S. T. (2010). *Latent class and latent transition analysis: With applications in the social, behavioral, and health sciences*. Hoboken NJ: Wiley.

Collins, W., Haydon, K. C., & Hesemeyer, P. (2007). Relating relationships: Development, expansion, and interrelations in relationship networks. *International Journal of Behavioral Development*, *31*(6), 581–584. doi:10.1177/0165025407080587

Collins, W., & Laursen, B. (2004). Changing relationships, changing youth: Interpersonal contexts of adolescent development. *Journal of Early Adolescence*, *24*(1), 55–62. doi:10.1177/0272431603260882

Cooley, C. H. (1909). *Human nature and the social order*. New York: Scribner.

Covington, M. (2000). Goal theory, motivation, and school achievement: An integrative review. Annual *Review of Psychology*, *51*, 171–200.

Crocker, J., & Park, L. (2004). The costly pursuit of self-esteem. *Psychological Bulletin*, *130*(3), 392–414. doi:10.1037/0033-2909.130.3.392

Croll, P. (2008). Occupational choice, socio-economic status and educational attainment: A study of the occupational choices and destinations of young people in the British

Household Panel Survey. *Research Papers in Education*, *23*(3), 243–268. doi:10.1080/02671520701755424

Deihl, L., Vicary, J., & Deike, R. (1997). Longitudinal trajectories of self-esteem from early to middle adolescence and related psychosocial variables among rural adolescents. *Journal of Research on Adolescence*, *7*(4), 393–411.

Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, *68*(4), 653–663.

Diener, E., Emmons, R., Larsen, R., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*(1), 71–75.

Diener, E., Wolsic, B., & Fujita, F. (1995). Physical attractiveness and subjective well-being. *Journal of Personality and Social Psychology*, *69*(1), 120–129.

Dimitrov, D. M. (2010). Testing for factorial invariance in the context of construct validation. *Measurement and Evaluation in Counseling and Development*, *43*(2), 121–149. doi:10.1177/0748175610373459

Donnellan, M., & Trzesniewski, K. (2010). Groundhog Day versus Alice in Wonderland, Red Herrings versus Swedish Fishes, and hopefully something constructive: A reply to comments. *Perspectives on Psychological Science*, *5*(1), 103–108. doi:10.1177/1745691609357020

Donnellan, M., Trzesniewski, K., Conger, K., & Conger, R. (2007). A three-wave longitudinal study of self-evaluations during young adulthood. *Journal of Research in Personality*, *41*(2), 453–472. doi:10.1016/j.jrp.2006.06.004

Donnellan, M., Trzesniewski, K., Robins, R., Moffitt, T., & Caspi, A. (2005). Low self-esteem is related to aggression, antisocial behavior, and delinquency. *Psychological Science*, *16*(4), 328–335.

Duncan, T., Duncan, S., & Strycker, L. (2006). *An introduction to latent variable growth curve modeling*. New Jersey: Lawrence Erlbaum Associates Inc.

Dush, C., & Amato, P. (2005). Consequences of relationship status and quality for subjective well-being. *Journal of Social and Personal Relationships*, *22*(5), 607–627. doi:10.1177/0265407505056438

Eccles, J. (2009). Who am I and what am I going to do with my life? Personal and collective identities as motivators of action. *Educational Psychologist*, *44*(2), 78–89. doi:10.1080/00461520902832368

Eder, D. (1985). The cycle of popularity: Interpersonal relations among female adolescents. *Sociology of Education*, *58*(3), 154–165. doi:10.2307/2112416

Edin, K., & Kefalas, M. (2007). *Promises I can keep: Why poor women put motherhood before marriage* (2nd rev. ed.). Berkeley: University of California Press.

Enders, C. (2010). *Applied missing data analysis*. New York: The Guilford Press.

Falci, C. D. (2011). Self-esteem and mastery trajectories in high school by social class and gender. *Social Science Research*, *40*(2), 586–601. doi:10.1016/j.ssresearch.2010.12.013

Freud, A. (1971). Adolescence as a developmental disturbance. In A. Freud & D. T. Burlingham (Eds.), *The writings of Anna Freud* (Vol. 7, pp. 39–47). New York: International Universities Press (Original work published 1969).

Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development*, *63*(1), 103–115. doi:10.1111/j.1467-8624.1992.tb03599.x

Goossens, L. (2006). Adolescent development: Putting Europe on the map. In S. Jackson & L. Goossens (Eds.), *Handbook of adolescent development* (pp. 1–10). Hove and New York: Psychology Press.

Greenberger, E., Chen, C. S., Dmitrieva, J., & Farruggia, S. P. (2003). Item-wording and the dimensionality of the Rosenberg Self-Esteem Scale: Do they matter? *Personality and Individual Differences*, *35*(6), 1241–1254. doi:10.1016/S0191-8869(02)00331-8

Hall, G. S. (1904). *Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion, and education* (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.

Harter, S. (1993). Causes and consequences of low self-esteem in children and adolescents. In R. F. Baumeister (Ed.), *Self-esteem. The puzzle of low self-regard* (pp. 87–116). New York: Plenum Press.

Harter, S. (1999). *The Construction of the self: A developmental perspective*. New York: The Guilford Press.

Harter, S. (2012). *The Construction of the self. Developmental and sociocultural foundations* (2nd ed.). New York: The Guilford Press.

Harter, S., & Whitesell, N. (2003). Beyond the debate: Why some adolescents report stable self-worth over time and situation, whereas others report changes in self-worth. *Journal of Personality*, *71*(6), 1027–1058.

Haugland, S., & Wold, B. (2001). Subjective health complaints in adolescence: Reliability and validity of survey methods. *Journal of Adolescence*, *24*(5), 611–624.

Hay, P. J., Mond, J., Buttner, P., & Darby, A. (2008). Eating disorder behaviors are increasing: Findings from two sequential community surveys in South Australia. *PLoS ONE*, *3*(2), e1541. doi:10.1371/journal.pone.0001541

Hintsanen, M., Alatupa, S., Pullmann, H., Hirstio-Snellman, P., & Keltikangas-Jarvinen, L. (2010). Associations of self-esteem and temperament traits to self- and teacher-reported social status among classmates. *Scandinavian Journal of Psychology*, *51*(6), 488–494. doi:10.1111/j.1467-9450.2010.00820.x

Hipwell, A. E., Keenan, K., Loeber, R., & Battista, D. (2010). Early predictors of sexually intimate behaviors in an urban sample of young girls. *Developmental Psychology*, *46*(2), 366–378. doi:10.1037/a0018409

Hirsch, B., & DuBois, D. (1991). Self-esteem in early adolescence: The identification and prediction of contrasting longitudinal trajectories. *Journal of Youth and Adolescence*, *20*(1), 53–72.

Hirschi, A. (2011). Career-choice readiness in adolescence: Developmental trajectories and individual differences. *Journal of Vocational Behavior*, *79*(2), 340–348. doi:10.1016/j.jvb.2011.05.005

Holsen, I., Kraft, P., & Vitterso, J. (2000). Stability in depressed mood in adolescence: Results from a 6-year longitudinal panel study. *Journal of Youth and Adolescence*, *29*(1), 61–78.

Horan, P. M., DiStefano, C., & Motl, R. W. (2003). Wording effects in self-esteem scales: Methodological artifact or response style? *Structural Equation Modeling*, *10*(3), 435–455. doi:10.1207/S15328007SEM1003_6

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure-analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. doi:10.1080/10705519909540118

Huang, C. (2010). Mean-level change in self-esteem from childhood through adulthood: Meta-analysis of longitudinal studies. *Review of General Psychology*, *14*(3), 251–260. doi:10.1037/a0020543

James, W. (1890). *The Principles of psychology*. Cambridge, MA: Harvard University Press.

Johnson, W., Hicks, B., McGue, M., & Iacono, W. (2007). Most of the girls are alright, but some aren't: Personality trajectory groups from ages 14 to 24 and some associations

with outcomes. *Journal of Personality and Social Psychology*, *93*(2), 266–284. doi:10.1037/0022-3514.93.2.266

Joiner, T., Alfano, M., & Metalsky, G. (1992). When depression breeds contempt: Reassurance seeking, self-esteem, and rejection of depressed college-students by their roommates. *Journal of Abnormal Psychology*, *101*(1), 165–173. doi:10.1037/0021-843X.101.1.165

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology*, *86*(1), 80–92. doi:10.1037//0021-9010.86.1.80

Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2002). Are measures of self-esteem, neuroticism, locus of control, and generalized self-efficacy indicators of a common core construct? *Journal of Personality and Social Psychology*, *83*(3), 693–710. doi:10.1037//0022-3514.83.3.693

Kendler, K. S., Gardner, C. O., & Prescott, C. A. (1998). A population-based twin study of self-esteem and gender. *Psychological Medicine*, *28*(6), 1403–1409. doi:10.1017/S0033291798007508

Kernis, M. (2003). Toward a conceptualization of optimal self-esteem. *Psychological Inquiry*, *14*(1), 1–26.

Keyes, C. L. M., & Ryff, C. D. (2003). Somatization and mental health: A comparative study of the idiom of distress hypothesis. *Social Science & Medicine*, *57*(10), 1833–1845. doi:10.1016/S0277-9536(03)00017-0

Kling, K., Hyde, J., Showers, C., & Buswell, B. (1999). Gender differences in self-esteem: A meta-analysis. *Psychological Bulletin*, *125*(4), 470–500.

Kloep, M., & Hendry, L. B. (2011). Rejoinders to Chapters 2 and 3: Critical comments on Arnett's and Tanner's approach. In J. J. Arnett, M. Kloep, L. B. Hendry, & J. L. Tanner (Eds.), *Debating emerging adulthood. Stage or process?* (pp. 107–120). New York: Oxford University Press.

Knauss, C., Paxton, S., & Alsaker, F. (2008). Body dissatisfaction in adolescent boys and girls: Objectified body consciousness, internalization of the media body ideal and perceived pressure from media. *Sex Roles*, *59*(9–10), 633–643.

Kroger, J. (1999). *Identity development: Adolescence through adulthood*. Thousand Oaks: Sage Publications, Inc.

Kuster, F., Orth, U., & Meier, L. L. (2012). Rumination mediates the prospective effect of low self-esteem on depression: A five-wave longitudinal study. *Personality and Social Psychology Bulletin*, *38*(6), 747–759. doi:10.1177/0146167212437250

Labre, M. (2002). Adolescent boys and the muscular male body ideal. *Journal of Adolescent Health*, *30*(4), 233–242.

Laursen, B., & Collins, W. (2009). Parent–child relationships during adolescence. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 3–42). Hoboken, NJ: Wiley.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Co Inc.

Leary, M., Haupt, A., Strausser, K., & Chokel, J. (1998). Calibrating the sociometer: The relationship between interpersonal appraisals and state self-esteem. *Journal of Personality and Social Psychology*, *74*(5), 1290–1299. doi:10.1037//0022-3514.74.5.1290

Lehnart, J., Neyer, F. J., & Eccles, J. (2010). Long-term effects of social investment: The case of partnering in young adulthood. *Journal of Personality*, *78*(2), 639–670. doi:10.1111/j.1467-6494.2010.00629.x

Litwack, S. D., Aikins, J. W., & Cillessen, A. H. N. (2012). The distinct roles of sociometric and perceived popularity in friendship: Implications for adolescent depressive affect and self-esteem. *Journal of Early Adolescence*, *32*(2), 226–251. doi:10.1177/0272431610387142

Lucas, R., Diener, E., & Suh, E. (1996). Discriminant validity of well-being measures. *Journal of Personality and Social Psychology*, *71*(3), 616–628.

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, *71*(3), 543–562. doi:10.1111/1467-8624.00164

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, *46*(2), 137–155. doi:10.1023/A:1006824100041

Markiewicz, D., Lawford, H., Doyle, A. B., & Haggart, N. (2006). Developmental differences in adolescents' and young adults' use of mothers, fathers, best friends, and romantic partners to fulfil attachment needs. *Journal of Youth and Adolescence*, *35*(1), 127–140. doi:10.1007/s10964-005-9014-5

Marsh, H., Antill, J., & Cunningham, J. (1987). Masculinity, femininity, and androgyny: Relations to self-esteem and social desirability. *Journal of Personality*, *55*(4), 661–685. doi:10.1111/j.1467-6494.1987.tb00457.x

Marsh, H., Scalas, L. F., & Nagengast, B. (2010). Longitudinal tests of competing factor structures for the Rosenberg Self-Esteem Scale: Traits, ephemeral artifacts, and stable response styles. *Psychological Assessment*, *22*(2), 366–381. doi:10.1037/a0019225

Mattanah, J. F., Lopez, F. G., & Govern, J. M. (2011). The contributions of parental attachment bonds to college student development and adjustment: A meta-analytic review. *Journal of Counseling Psychology*, *58*(4), 565–596. doi:10.1037/a0024635

Mead, G. H. (1934). *Mind, self, and society*. Chicago: University of Chicago Press.

Mickelson, K., Kessler, R., & Shaver, P. (1997). Adult attachment in a nationally representative sample. *Journal of Personality and Social Psychology*, *73*(5), 1092–1106.

Mikulincer, M. (1995). Attachment style and the mental representation of the self. *Journal of Personality and Social Psychology*, *69*(6), 1203–1215.

Call, K. T. & Mortimer, J. T. (2001). *Arenas of comfort in adolescence: A study of adjustment in context*. NJ: Lawrence Erlbaum Associates.

Mortimer, J. T., Vuolo, M., Staff, J., Wakefield, S., & Xie, W. (2008). Tracing the timing of "career" acquisition in a contemporary youth cohort. *Work and Occupations*, *35*(1), 44–84. doi:10.1177/0730888407309761

Mruk, C. J. (2006). *Self-esteem research, theory and practice*. New York: Springer Publishing Company.

Murray, S., Holmes, J. G., & Griffin, D. W. (2000). Self-esteem and the quest for felt security: How perceived regard regulates attachment processes. *Journal of Personality and Social Psychology*, *78*(3), 478–498. doi:10.1037/0022-3514.78.3.478

Muthén, B. (2006). The potential of growth mixture modelling. *Infant and Child Development*, *15*(6), 623–625. doi:10.1002/icd.482

Muthén, B., & Muthén, L. (2000). Integrating person-centered and variable-centered analyses: Growth mixture modeling with latent trajectory classes. *Alcoholism: Clinical and Experimental Research*, *24*(6), 882–891.

Mykletun, A., Knudsen, A. K., & Mathiesen, K. S. (2009). *Psykiske lidelser i Norge. Et folkehelseperspektiv*. (No. 2009:8). Nasjonalt folkehelseinstitutt.

Nagin, D. (1999). Analyzing developmental trajectories: A semiparametric, group-based approach. *Psychological Methods*, *4*(2), 139–157. doi:10.1037//1082-989X.4.2.139

Neff, K., & Vonk, R. (2009). Self-compassion versus global self-esteem: Two different ways of relating to oneself. *Journal of Personality*, *77*(1), 23–50. doi:10.1111/j.1467-6494.2008.00537.x

Neiss, M. B., Sedikides, C., & Stevenson, J. (2006). Genetic influences on level and stability of self-esteem. *Self and Identity*, *5*(3), 247–266. doi:10.1080/15298860600662106

Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science*, *3*(5), 400–424. doi:10.1111/j.1745-6924.2008.00088.x

O'Donnell, K., Brydon, L., Wright, C., & Steptoe, A. (2008). Self-esteem levels and cardiovascular and inflammatory responses to acute stress. *Brain Behavior and Immunity*, *22*(8), 1241–1247. doi:10.1016/j.bbi.2008.06.012

Offer, D., & Schonert-Reichl, K. (1992). Debunking the myths of adolescence: Findings from recent research. *Journal of the American Academy of Child and Adolescent Psychiatry*, *31*(6), 1003–1014.

Øiestad, G. (2009). *Selvfølelsen*. Oslo: Gyldendal.

Orth, U., Robins, R., & Roberts, B. (2008). Low self-esteem prospectively predicts depression in adolescence and young adulthood. *Journal of Personality and Social Psychology*, *95*(3), 695–708. doi:10.1037/0022-3514.95.3.695

Orth, U., Robins, R., Trzesniewski, K., Maes, J., & Schmitt, M. (2009). Low self-esteem is a risk factor for depressive symptoms from young adulthood to old age. *Journal of Abnormal Psychology*, *118*(3), 472–478. doi:10.1037/a0015922

Orth, U., Robins, R. W., & Widaman, K. F. (2012). Life-span development of self-esteem and its effects on important life outcomes. *Journal of Personality and Social Psychology*, *102*(6), 1271–1288. doi:10.1037/a0025558

Ottenbreit, N. D., & Dobson, K. S. (2004). Avoidance and depression: The construction of the Cognitive-Behavioral Avoidance Scale. *Behaviour Research and Therapy*, *42*(3), 293–313. doi:10.1016/S0005-7967(03)00140-2

Pallesen, S., Bjorvatn, B., Nordhus, I., Sivertsen, B., Hjornevik, M., & Morin, C. (2008). A new scale for measuring insomnia: The Bergen Insomnia Scale. *Perceptual and Motor Skills*, *107*(3), 691–706. doi:10.2466/PMS.107.3.691-706

Poikolainen, K., Aalto-Setala, T., Marttunen, M., Tuulio-Henriksson, A., & Lonnqvist, J. (2000). Predictors of somatic symptoms: A five year follow up of adolescents. *Archives of Disease in Childhood*, *83*(5), 388–392.

Pruessner, J., Hellhammer, D., & Kirschbaum, C. (1999). Low self-esteem, induced failure and the adrenocortical stress response. *Personality and Individual Differences*, *27*(3), 477–489.

Pyszczynski, T., Solomon, S., Greenberg, J., Arndt, J., & Schimel, J. (2004). Why do people need self-esteem? A theoretical and empirical review. *Psychological Bulletin*, *130*(3), 435–468. doi:10.1037/0033-2909.130.3.435

Raevuori, A., Dick, D. M., Keski-Rahkonen, A., Pulkkinen, L., Rose, R. J., Rissanen, A., Silventoinen, K. (2007). Genetic and environmental factors affecting self-esteem from age 14 to 17: A longitudinal study of Finnish twins. *Psychological Medicine*, *37*(11), 1625–1633. doi:10.1017/S0033291707000840

Ram, N., & Grimm, K. (2009). Growth mixture modeling: A method for identifying differences in longitudinal change among unobserved groups. *International Journal of Behavioral Development*, *33*(6), 565–576. doi:10.1177/0165025409343765

Rhodes, J., Roffman, J., Reddy, R., & Fredriksen, K. (2004). Changes in self-esteem during the middle school years: A latent growth curve study of individual and contextual influences. *Journal of School Psychology*, *42*(3), 243–261. doi:10.1016/j.jsp.2004.04.001

Robins, R. W., Tracy, J. L., Trzesniewski, K., Potter, J., & Gosling, S. D. (2001). Personality correlates of self-esteem. *Journal of Research in Personality*, *35*(4), 463–482. doi:10.1006/jrpe.2001.2324

Rohde, P., Lewinsohn, P., & Seeley, J. (1994). Are adolescents changed by an episode of major depression? *Journal of the American Academy of Child and Adolescent Psychiatry*, *33*(9), 1289–1298.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton NJ: Princeton University Press.

Rubin, D. (1976). Inference and missing data. *Biometrika*, *63*(3), 581–590. doi:10.1093/biomet/63.3.581

Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In N. Eisenberg (Ed.) *Handbook of child psychology: Vol 3. Social, emotional and personality development* (pp. 571–645). Hoboken, NJ: Wiley.

Ryan, R., & Brown, K. (2003). Why we don't need self-esteem: On fundamental needs, contingent love, and mindfulness. *Psychological Inquiry*, *14*(1), 71–76.

Ryan, R., & Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78.

Saka, N., & Gati, I. (2007). Emotional and personality-related aspects of persistent career decision-making difficulties. *Journal of Vocational Behavior*, *71*(3), 340–358. doi:10.1016/j.jvb.2007.08.003

Salmela-Aro, K. (2010). Personal goals and well-being: How do young people navigate their lives? In S. Shulman & J. E. Nurmi (Eds.), *Role of goals in navigating individual lives during emerging adulthood* (Vol. 130, pp. 13–26). San Francisco: Wiley Periodicals.

Schafer, J., & Graham, J. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, *7*(2), 147–177. doi:10.1037//1082-989X.7.2.147

Schmalz, D., Deane, G., Birch, L., & Davison, K. (2007). A longitudinal assessment of the links between physical activity and self-esteem in early adolescent non-Hispanic females. *Journal of Adolescent Health*, *41*(6), 559–565. doi:10.1016/j.jadohealth.2007.07.001

Sedikides, C. (1993). Assessment, enhancement, and verification determinants of the self-evaluation process. *Journal of Personality and Social Psychology*, *65*(2), 317–338. doi:10.1037//0022-3514.65.2.317

Seefeldt, V., Malina, R., & Clark, M. (2002). Factors affecting levels of physical activity in adults. *Sports Medicine*, *32*(3), 143–168.

Seidman, E., & French, S. (2004). Developmental trajectories and ecological transitions: A two-step procedure to aid in the choice of prevention and promotion interventions. *Development and Psychopathology*, *16*(4), 1141–1159. doi:10.1017/S0954579404040179

Seiffge-Krenke, I., & Beyers, W. (2007). Changes in close relationships during the transition to adulthood and their impact on adaptation: Longitudinal approaches: Introduction to the Special Section. *International Journal of Behavioral Development*, *31*(6), 537–538. doi:10.1177/0165025407080571

Seligman, M. E. (2007). *What you can change and what you can't: The complete guide to successful self-improvement*. New York: Vintage books.

Siconolfi, S., Lasater, T., Snow, R., & Carleton, R. (1985). Self-reported physical activity compared with maximal oxygen uptake. *American Journal of Epidemiology*, *122*(1), 101–105.

Simmons, R., Burgeson, R., Carlton-Ford, S., & Blyth, D. (1987). The impact of cumulative change in early adolescence. *Child Development*, *58*(5), 1220–1234.

Skrede, K. (2005). Foreldreskap i forandring – færre menn blir fedre. *Tidsskrift for kjønnsforskning*, *29*(2), 4–22.

Smetana, J. G., Campione-Barr, N., & Metzger, A. (2006). Adolescent development in interpersonal and societal contexts. *Annual review of psychology*, 57, 255–284.

Sonstroem, R., & Morgan, W. (1989). Exercise and self-esteem: Rationale and model. *Medicine and Science in Sports and Exercise*, *21*(3), 329–337.

Sowislo, J., & Orth, U. (2012). Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychological Bulletin, Advance online publication*. doi:10.1037/a0028931

Sterba, S., & Bauer, D. (2010). Matching method with theory in person-oriented developmental psychopathology research. *Development and Psychopathology*, *22*(2), 239–254. doi:10.1017/S0954579410000015

Stern, D. (1985). *The interpersonal world of the infant*. New York: Basic Books Inc.

Stinson, D. A., Logel, C., Zanna, M. P., Holmes, J. G., Cameron, J. J., Wood, J. V., & Spencer, S. J. (2008). The cost of lower self-esteem: Testing a self-and-social-bonds model of health. *Journal of Personality and Social Psychology*, *94*(3), 412–428. doi:10.1037/0022-3514.94.3.412

Storvoll, E. E., Strandbu, Å., & Wichstrøm, L. (2005). A cross-sectional study of changes in Norwegian adolescents' body image from 1992 to 2002. *Body Image*, *2*(1), 5–18. doi:10.1016/j.bodyim.2005.01.001

Strecher, V., Devellis, B., Becker, M., & Rosenstock, I. (1986). The role of self-efficacy in achieving health behaviour change. *Health Education Quarterly*, *13*(1), 73–91. doi:10.1177/109019818601300108

Sullivan, H. S. (1953). *The interpersonal theory and psychiatry*. New York: Norton.

Swann, W., Chang-Schneider, C., & McClarty, K. (2007). Do people's self-views matter? Self-concept and self-esteem in everyday life. *American Psychologist*, *62*(2), 84–94. doi:10.1037/0003-066X.62.2.84

Swann, W., & Seyle, D. (2006). The antecedents of self-esteem. In M. E. Kernis (Ed.), *Self-esteem. Issues and answers. A sourcebook of current perspectives* (pp. 201–206). New York: Psychology Press.

Tafarodi, R., & Swann, W. (2001). Two-dimensional self-esteem: Theory and measurement. *Personality and Individual Differences*, *31*(5), 653–673.

Tanner, J., & Arnett, J. (2011). Presenting "emerging adulthood": What makes it developmentally distinctive? In J. J. Arnett, M. Kloep, L. B. Hendry, & J. L. Tanner (Eds.), *Debating emerging adulthood. Stage or process?* (pp. 13–30). New York: Oxford University Press.

Taylor, S., & Brown, J. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, *103*(2), 193–210. doi:10.1037/0033-2909.103.2.193

Terwogt, M., Rieffe, C., Miers, A., Jellesma, F., & Tolland, A. (2006). Emotions and self-esteem as indicators of somatic complaints in children. *Infant and Child Development*, *15*(6), 581–592. doi:10.1002/icd.479

Thomsen, D. K., Mehsen, M. Y., Christensen, S., & Zachariae, R. (2003). Rumination—relationship with negative mood and sleep quality. *Personality and Individual Differences*, *34*(7), 1293–1301. doi:10.1016/S0191-8869(02)00120-4

Tofighi, D., & Enders, C. (2008). Identifying the correct number of classes in growth mixture models. In G. Hancock & Samuelsen (Eds.), *Advances in latent variable mixture models* (pp. 317–341). Charlotte, NC: Information Age Publishing.

Trzesniewski, K., Donnellan, M., Moffitt, T., Robins, R., Poulton, R., & Caspi, A. (2006). Low self-esteem during adolescence predicts poor health, criminal behavior, and limited economic prospects during adulthood. *Developmental Psychology*, *42*(2), 381–390. doi:10.1037/0012-1649.42.2.381

Trzesniewski, K., Donnellan, M., & Robins, R. (2003). Stability of self-esteem across the life span. *Journal of Personality and Social Psychology*, *84*(1), 205–220. doi:10.1037//0022-3514.84.1.205

Twenge, J., & Campbell, W. (2001). Age and birth cohort differences in self-esteem: A cross-temporal meta-analysis. *Personality and Social Psychology Review*, *5*(4), 321–344.

Twenge, J., & Campbell, W. (2002). Self-esteem and socioeconomic status: A meta-analytic review. *Personality and Social Psychology Review*, *6*(1), 59–71.

Van den Berg, P. A., Mond, J., Eisenberg, M., Ackard, D., & Neumark-Sztainer, D. (2010). The link between body dissatisfaction and self-esteem in adolescents: Similarities across gender, age, weight status, race/ethnicity, and socioeconomic status. *Journal of Adolescent Health*, *47*(3), 290–296. doi:10.1016/j.jadohealth.2010.02.004

Van der Horst, K., Paw, M., Twisk, J., & Van Mechelen, W. (2007). A brief review on correlates of physical activity and sedentariness in youth. *Medicine and Science in Sports and Exercise*, *39*(8), 1241–1250. doi:10.1249/mss.0b013e318059bf35

Veselska, Z., Geckova, A. M., Gajdosova, B., Orosova, O., Van Dijk, J. P., & Reijneveld, S. A. (2010). Socio-economic differences in self-esteem of adolescents influenced by

personality, mental health and social support. *European Journal of Public Health*, *20*(6), 647–652. doi:10.1093/eurpub/ckp210

Vittersø, J. (2009). Satisfaction with Life Scale. *Tidsskrift for Norsk Psykologforening*, *46*, 757–758.

Watson, D., & Clark, L. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, *96*(3), 465–490. doi:10.1037//0033-2909.96.3.465

Widaman, K. F., Ferrer, E., & Conger, R. D. (2010). Factorial invariance within longitudinal structural equation models: Measuring the same construct across time. *Child Development Perspectives*, *4*(1), 10–18.

Willett, J., & Sayer, A. (1994). Using covariance structure analysis to detect correlates and predictors of individual change over time. *Psychological Bulletin*, *116*(2), 363–381. doi:10.1037/0033-2909.116.2.363

Winnicott, D. W. (1958). *Collected papers: Through pediatrics to psycho-analysis*. London: Tavistock Publications.

Zimmerman, M., Copeland, L., Shope, J., & Dielman, T. (1997). A longitudinal study of self-esteem: Implications for adolescent development. *Journal of Youth and Adolescence*, *26*(2), 117–141.