Ingvild Oxås Henriksen

Self-Esteem as a Resilience Factor for Symptoms of Anxiety, Depression, and Attention Problems: Evidence from A Clinical Population of Adolescents

NTNU
Norwegian University of
Science and Technology

ABSTRACT

This prospective study examined whether self-esteem acts as a protective factor against anxiety/depressive symptoms and attention problems in adolescence. A clinical sample of 201 Norwegian adolescents, aged 13-18, referred to the Department of Child and Adolescent Psychiatry (CAP) was assessed. In the baseline study self-esteem and symptoms of anxiety/depression and attention problems were measured by self-report. A follow-up study was conducted three years later, measuring self-reported symptoms of anxiety/depression and attention problems. Data were analyzed using structural equation modeling. Findings showed that high self-esteem at baseline predicted a reduction in symptoms of both anxiety/depression and attention problems at follow-up. Results indicate that appraising self-esteem in the clinical practice may reduce the presence of anxiety/depression symptoms and attention problems among adolescents with mental health problems.

INTRODUCTION

The nature of self-esteem has been widely debated in the psychological literature the last couple of decades (Baumeister, Campbell, Krueger, & Vohs, 2003; Ryan & Brown, 2003). However, the concept of self-esteem has a long history, and two early contributions to the definition of self-esteem were made by W. James and J. Cooley (Bolognini, Plancherel, Bettschart, & Halfon, 1996). First, James (1890) claimed that self-esteem is linked to the ratio between aspiration and success. James suggested that high self-esteem was a result of an individual's success or achievements being equal to, or greater than, the person's ambitions. Lower achievements than aspirations would thus lead to reduced self-esteem. Cooley (Cooley, 1902) on the other hand, believed that a person´s self-esteem is socially determined, and a result of significant others´ response to that particular person. Through several studies, Harter (e.g. Harter, 1994) has shown that both theories are relevant, and that the two theories can be considered complementary, rather than contradictory (Bolognini et al., 1996; Harter, 1994).

Self-esteem is often viewed as an important part of resilience (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003; Schei et al., 2015; Skrove, Romundstad, & Indredavik, 2013; Veselska et al., 2009). Resilience is used to describe individual differences in the ability to overcome

stress or adversity (Rutter, 1987, 2007). Thus, resilience plays an important role in individual´s psychological outcomes when put under stress.

Several studies have explored the relation between self-esteem and emotional disorders, such as anxiety and depression. For example, Greenberg et al. (Greenberg, Solomon, & Pyszczynski, 1992) have shown that self-esteem has an anxiety-buffering function. Also, threats to self-esteem has been shown to induce anxiety (Bennett & Holmes, 1975; Burish & Houston, 1979) and to engage strategies that defend or restore self-esteem (Greenberg, Pyszczynski, & Solomon, 1986). When self-esteem is successfully defended, the level of anxiety is reduced (Bennett & Holmes, 1975). Many studies have concluded that people with high self-esteem are happier and less likely to be depressed than others (Baumeister et al., 2003). A large meta-analysis by Sowislo and Orth (2013) comprising of a total of 85 longitudinal studies, concluded that the effect of low self-esteem on depression is solid and holds across different sample and design characteristics of studies (Sowislo & Orth, 2013). However, most studies aiming to examine self-esteem have assessed community samples and few studies have been conducted on clinical populations. Moreover, most studies have assessed adults. Hence, the role of self-esteem in mental illness among adolescents is unclear.

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common psychiatric disorders in children and adolescents (Polanczyk, De Lima, Horta, Biederman, & Rohde, 2007; Willcutt, 2012). Impulsivity, inattention and hyperactivity are the core characteristic symptoms, and the disorder is associated with impairments in social, emotional, academic and behavioral domains (Wehmeier, Schacht, & Barkley, 2010). In many cases, symptoms persist into adulthood (Biederman, Petty, Clarke, Lomedico, & Faraone, 2011; Faraone, Biederman, & Mick, 2005). It has been shown that ADHD and emotional problems are correlated (Wehmeier et al., 2010), but the causal details of this relation remain unknown. Self-esteem is generally found to be lower in children with ADHD than in other children (Hechtman, Weiss, & Perlman, 1980; Mazzone et al., 2013), and untreated ADHD is associated with poorer long-term self-esteem (Harpin, Mazzone, Raynaud, Kahle, & Hodgkins, 2013). A clinical study by Slomkowski and coworkers (Slomkowski, Klein, & Mannuzza, 1995) found that adolescents with ADHD who had higher self-esteem reported fewer symptoms. Clinicians also judged them to having better psychosocial adjustment. Self-esteem and social functioning is considered important outcome measures for children with ADHD, and provide an assessment

of functional impairments in the individual (Harpin et al., 2013). However, the exact role of self-esteem in long-term attention problems outcome is unclear.

In sum, several studies have explored the role of self-esteem, and results indicate that it may function as a resilience factor that can reduce depressive symptoms. However, with regards to behavior problems, such as ADHD results are inconclusive. To the best of our knowledge, virtually no studies have investigated the potential protective role of self-esteem on the development of attention problems and symptoms of anxiety/depression among adolescents. Furthermore, few clinical populations have been assessed. We approach this subject through a semi-reciprocal model based on a clinical population, with the aim of contributing to the understanding of the relationship between self-esteem and mental health.

The following main hypotheses were stipulated:

1. Self-esteem protects against the development of more anxiety and depression symptoms in a clinical sample of adolescents.

2. Self-esteem protects against the development of more attention problems, but to a less extent than for internalized problems (symptoms of depression and anxiety).

3. Self-esteem is negatively correlated to both depressive/anxiety symptoms and attention problems in a clinical sample of adolescents.

MATERIAL AND METHODS

Study design

The study is part of The Health Survey in the Department of Child and Adolescent Psychiatry (CAP), St. Olav's University Hospital, Trondheim, Norway. This clinic provides diagnostic assessment and treatment for all psychiatric conditions in referred children and adolescents, aged 0-18 years. This was a prospective study of a defined clinical population. Inclusion criteria in the baseline study were: referred adolescents, aged 13–18 years, who had at least one personal attendance at the clinic between February 2009 and February 2011. Exclusion criteria were: major difficulties in answering the questionnaire due to their psychiatric state, cognitive function, visual impairments or lack of sufficient language skills. Emergency patients were invited to take part once they entered a stable phase. The follow-up study was

conducted in 2012-2014. Participation at follow-up did not require attendance at the CAP-clinic.

Study procedure

Newly referred patients as well as patients already enrolled at the CAP clinic received oral and written invitations at their first attendance after the project started. Written informed consent was obtained from adolescents and parents prior to inclusion, according to the CAP survey procedures. Relevant for this study: The participating adolescents responded to an electronic questionnaire about his or her mental and physical health in conjunction with an appointment at the clinic, without the presence of their parents. The questionnaire was accessed via a password-protected website. A project coordinator provided assistance if needed. In addition, data were collected from clinical charts. At follow-up adolescents from baseline were invited to respond to an electronic questionnaire measuring physical and mental health status.

Study population

In the first study period, 2032 adolescent patients had at least one attendance at the CAP clinic. Of these, 289 were excluded on the basis of the exclusion criteria. Also, 95 were lost to registration (missing). Hence, 1648 (81.1 %) were invited to participate. Of these, a total of 717 (43.5 %) adolescents, aged 13-18 years, participated in the baseline CAP survey; 393 (54.8 %) girls and 324 (45.2 %) boys. All baseline participants, who had consented to being contacted for follow-up (n=685), by then aged 16 – 21 years, were invited. Among the invited 570 participated at follow-up: 324 (57%) girls and 246 (43%) boys. Mean birth year of participants was 1994,2. Mean age was 15,66 years of age, standard deviation: 1,65. To explore the representativeness of the study population, anonymous information about the reference population was collected from annual reports from St. Olav's University Hospital, 2009–2011. All adolescents in the study period (n=2032) minus those excluded (n=289) were defined as reference population (n=1743). In accordance with the permission given by the Norwegian Social Science Data Services; The Data Protection Official for Research, we compared age, sex and main reason for referral between participants (n=717) and non-participants (n=1026) of the reference population. Participants were 0.27 (95 % CI: 0.10-0.45) years older than non-participants (Mean (SD): 15.66 (1.65) vs. 15.39 (1.95), p=0.0015). There were more girls in the study group than in the non-participating group (393 (54.8 %) vs. 509

(49.6 %), p=0.032). Main reason for referral did not differ between participants and non-participants (data not shown, Pearson Exact Chi-Square test; p=0.11). Of the 570 participating at follow-up, 201 subjects, 122 girls (61%) and 79 boys (39%), responded to the relevant questionnaires, and thus constitute the sample of the present study. 155 responded to all study variables in the study, 96 (62%) girls and boys 59 (38%).

Measures

Rosenberg self-esteem scale (RSES) (Rosenberg, 1965) is a Likert-type scale with items answered by self-report on a four-point scale -from strongly agree (4) to strongly disagree (1). In the present study self-esteem was scored on a scale ranging from 4 to 12 using a short version of the RSES, consisting of 4 statements: "I take a positive attitude towards myself", "I feel I am a valuable person, at least on par with others", "I really feel useless at times", and "I feel I do not have much to be proud of". Scores on negative phrases were inverted. RSES has exhibited high validity in several studies (Blascovich & Tomaka, 1991; Robins, Hendin, & Trzesniewski, 2001; von Soest, 2005) and is widely used across nations in exploring self-esteem (Schmitt & Allik, 2005). Cronbach's alphas were .85 at baseline.

The Youth Self-report (YSR) (Achenbach & Rescorla, 2001) is a part of the Achenbach System of Empirically Based Assessment (ASEBA). It provides self-rating on 112 problem items. Each item is rated on a scale of 0-2: 0=not true; 1= somewhat ore sometimes true; 2= very true or often true. The problem checklist contains eight core syndrome scales (Achenbach, 1991). In this study, the syndrome scales Anxious/Depressed and Attention Problems were used. Baseline YSR was collected from clinical charts of those participants who had responded to YSR as part of the clinicians' diagnostic evaluation. At follow-up the YRS was obtained directly by the Hel-BUP project as the YSR was incorporated in the questionnaire answered by all participants. The study population for this particular study consists of participants who answered YSR both at baseline and follow-up.

Ethics

At both baseline and follow-up, written informed consent was obtained from the adolescents and parents prior to inclusion and from the parents of participants younger than 16 years of age, according to the study procedures in the CAP survey. Study approval was given by the Regional Committees for Medical and Health Research Ethics (reference numbers CAP

survey: 4.2008.1393, present study: 2015/845), and by the Norwegian Social Science Data Services (reference number CAP survey: 19976).

RESULTS

Descriptive analyses

Descriptive analyses were performed in SPSS 21.0 (IBM Corp., 2012). Mean values and standard deviations for study variables are presented in Table 1. Mean level of self-esteem was 9.41 (Standard deviation; SD: 3.08) at baseline. Symptoms of anxiety/depression significantly decreased from 8.92 (SD: 6.39) at baseline to 7.44 (SD: 5.95) at follow-up. Additionally, mean levels of attention problems decreased from 7.83 (SD: 3.87) at baseline to 6.80 (SD: 3.70) at follow-up.

Correlation analysis

There was a significant negative correlation between self-esteem and symptoms of both anxiety/depression and attention problems (See Table1) at baseline. The correlation between self-esteem and symptoms of anxiety/depression was strong, whereas the correlation between self-esteem and attention problems was moderately significant. There was a strong positive correlation between symptoms of anxiety/depression at baseline and at follow-up. Similarly the correlation between attention problems at baseline and follow-up was moderately significant. Symptoms of anxiety/depression at baseline were significantly positive correlated with attention problems, both at baseline and follow-up, however this relation was less evident. The correlation between attention problems at baseline and anxiety/depression, at both baseline and follow-up, was significant over time.

Apart from a weak negative correlation between year of birth and anxiety/depression at follow-up, and a very weak positive correlation between birth year and gender, there were no significant correlations between birth year and other variables.

Structural equation modeling

Structural equation modeling (SEM) was used to assess the effect of self-esteem on the stability of emotion problems and attention problems in the sample. In SEM, it is possible to combine latent factor analysis with standard regression analyses using sumscores, as well as a

6

lot of other modeling features (Kline, 2010). In the present study, a semi cross-lagged model was defined, where each type of symptoms at follow-up were regressed on the other type of symptoms, as well as on their same type of symptoms at baseline. Also, to assess the effect of self-esteem on changes in symptoms from baseline to follow-up, a latent construct of the four self-esteem items at baseline was included as a predictor of symptoms at follow-up, and covariates were freed between self-esteem and the two symptoms-measures. A covariate was also freed between the two types of symptoms at baseline and the residuals at follow-up.

The path model was created and tested in AMOS v.22 (Arbuckle, 2014) for potential correlations and cross-lagged paths (Figure 1). In the model, there was a high negative correlation between self-esteem and anxiety/depression at baseline (-.58, p< .01), as well as between self-esteem and symptoms of attention problems (-.37, p< .01). However, the correlation was stronger between self-esteem and symptoms of anxiety/depression. Furthermore, the stability over time of symptoms of both anxiety/depression (.40, p< .01) and attention problems (.52, p< .01) was relatively high.

Our main hypothesis was connected to the influence of self-esteem on change in levels of symptoms over time. Results showed that high self-esteem at baseline predicted a reduction in symptoms of both anxiety/depression (-.27, p< .01) and attention problems (-.16, p< .01) at follow-up. These results supported the assumption that the influence of self-esteem is greater on emotional problems than on behavioral problems. When we also controlled for gender in the model, and it did not affect the findings in any substantial manner.

Table 1.
Mean Values, Standard Deviations and Correlations Between Study Variables at Baseline (T1) and Follow-up (T2).

	1	2	3	4	5	6	7	Mean	SD
1. Birth year								1994,2	1,57
2. Gender	.19*							0,38[1]	0,49
3. Self-Esteem	-.11	-.47**						9.41	3.08
4. Anxious/Depressed T1	-.15	-.45**	.58**					8.92	6.39
5. Attention Problems T1	-.14	-.18* .	.32**	.41**				7.83	3.87
6. Anxious/Depressed T2	-.20*	-.43**	.56**	.61**	.33**			7.44	5.95
7. Attention Problems T2	-.15	-.22**	.33**	.30**	.57**	.54**		6.80	3.70

*p<.05 , **p< .01   N= 155-201   1: 0=girls, 1=boys
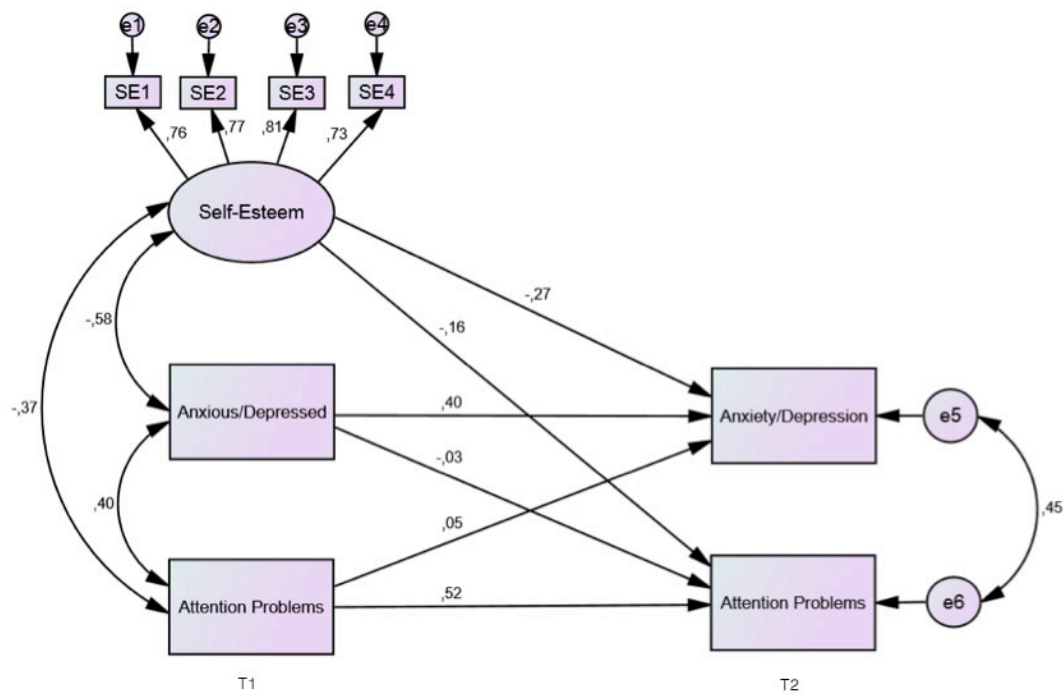
Figure 1. Cross-lagged panel model of Self-Esteem, Attention Problems and Symptoms of Anxiety/Depression at Baseline (T1) and Follow-up (T2).

DISCUSSION

In the present study, we intended to assess the relationship between self-esteem and symptoms of anxiety/depression and attention problems. We wanted to examine whether self-esteem protects against the development of more anxiety and depression symptoms in a clinical sample of adolescents, and to compare differences in the influence of self-esteem on these symptoms.

First, cross-sectional, analyses showed that self-esteem was negatively related to symptoms of depression/anxiety and attention problems in our clinical sample of adolescents. These findings are consistent with previous studies on depression/anxiety and self-esteem conducted in both clinical samples and community samples (Mazzone et al., 2013; Schei et al., 2015; Sowislo & Orth, 2012; Wehmeier et al., 2010). Also, and as expected, symptoms of depression/anxiety was positively related to attention problems at both baseline and follow-up. Symptoms of anxiety/depression and attention problems were moderately stable over

time, more so in attention problems than in anxiety/depression. Second, and in accordance with our main hypothesis, the predictive analyses in the path model showed that high self-esteem at baseline predicted a reduction in symptoms of both anxiety/depression and attention problems at follow-up. Furthermore, our findings supported the assumption that self-esteem is more protective in anxiety and depression than in attention problems.

Findings from the present study indicate that self-esteem protects against the development of more/increase in attention problems, anxiety and depression in adolescents. Thus, self-esteem may be of clinical relevance, despite not being a clinical term. A positive evaluation of the self may counteract symptoms of mental health problems in adolescence, although the actual mechanism for this is unclear. The protective effect of self-esteem may partly be explained by how self-esteem affect stress coping. Studies have shown that high self-esteem acts as a buffer under stress, hence reducing harmful effect of stress on mental health (Dumont & Provost, 1999). When an individual is exposed to stress, it will utilize different strategies, or coping mechanisms. Lazarus and Folkman (Lazarus & Folkman, 1984) described coping mechanisms as cognitive and behavioral efforts that individuals apply in order to tolerate, escape or minimize the effects of stress (Dumont & Provost, 1999). They described two main strategies: The active problem-solving strategy, and the avoidant strategy. Problem-solving strategies are considered functional because they allow confrontation of the problem, processing of the stress, and thus functional adaption. Avoidant strategies, on the other hand, are considered dysfunctional (Seiffge-Krenke, 2000). A possible explanation for this is that avoidant strategies disable processing of, and adaption to, the problem. It has been shown that individuals with low self-esteem often adopt passive-avoidant coping styles focused on emotions, whereas individuals with high self-esteem will adopt active problem focused coping strategies (Dumont & Provost, 1999; Thoits, 1995). Also, some studies have shown that high self-esteem is associated with persistence when facing adversity (Baumeister et al., 2003). These are possible mechanisms/explanations for how high self-esteem can act as a resilience factor against long-term mental health problems.

Self-esteem was also negatively correlated to attention problems. A study on adults with ADHD found that these subjects favored the use of maladaptive coping strategies (Young, 2005). Furthermore, attention problems were negatively associated with seeking advice and support from others. It is likely that maladaptive coping strategies and lack of social support

in problem solving may lead to reduced self-esteem. Some researchers have suggested that children with attention problems may struggle to attend social cues that allow them to engage in successful social interactions (Waschbusch, Andrade, & King, 2012). Tseng & Kawabata suggested that problems with behaviors such as sharing and listening could by others be perceived as inattentive or unsupportive behavior, which in turn may lead to poor peer liking (Tseng & Kawabata, 2014). Negative peer feedback and rejection is likely to cause a negative sense of self, which in turn may lead to an increase in maladaptive behavior. Adolescents rejected by peers might also miss out on practicing reciprocal social interactions. Stenseng et al. (Stenseng, Belsky, Skalicka, & Wichstrøm, 2014) found that lack of social belonging led to increased symptoms of hyperactivity-impulsivity and inattentiveness. It is possible that this manifests as a vicious circle, where attention problems lead to peer rejection and low self-esteem, which in turn increases symptoms. If self-esteem is a protective factor against symptoms, appraising self-esteem may affect long-term outcome of ADHD in adolescents.

Symptoms of both anxiety/depression and attention problems were moderately stable over time. Stability of attention problems was higher than for anxiety/depression, as expected. This may be due to the neurobiological nature of attention problems (Konrad & Eickhoff, 2010). Furthermore, ADHD has been shown to be mainly genetically mediated (Larsson, Larsson, & Lichtenstein, 2004), whereas symptoms of anxiety and depression is considered largely emotional, and are influenced by circumstances to a greater extent. This may partly explain why attention problems were more stable over time than emotional problems. Although the stability of attention problems was relatively high, even greater stability of symptoms may have been expected within a clinical population. The decrease in symptoms shows that despite a strong genetic disposition, self-esteem may act as a resilience factor against future symptoms of both attention problems and anxiety/depression. This emphasizes the gravity of self-esteem and indicates that self-esteem is of importance, also in a clinical setting.

LIMITATIONS

The present study has some limitations. First, analyses were based on symptoms of mental health problems, not diagnoses. Hence, findings cannot be directly transferred to adolescents with anxiety disorders, depressive disorders or ADHD. However, within a clinical population, it is likely that majority of subjects with symptoms of attention problems will have a

diagnosis of ADHD. Similarly, subjects with symptoms of anxiety and depression in a clinical selection are likely to be diagnosed with anxiety and depression. Second, subjects diagnosed with ADHD, anxiety or depression may have received medical treatment during the study period, which may have reduced or altered symptoms. Third, a short version of the Rosenberg self-esteem scale was used in the present study. Although this may have affected self-esteem scores, the four-item version correlates highly with the original scale, and has demonstrated validity as a measure of self-esteem (Derdikman-Eiron et al., 2011; Ranøyen, 2015; Tambs, 2004). Finally, as study was performed in a clinical population, results are not representative for the general population.

CONCLUSION

The present study demonstrates that subjects with high self-esteem suffer fewer symptoms of anxiety/depression and attention problems over time, indicating that self-esteem acts as a resilience factor against such symptoms. Hence, the present study highlights the importance of self-esteem in a clinical setting, and that appraising self-esteem in the clinical practice may affect long-term outcome of anxiety/depression symptoms and attention problems in adolescents.

REFERENCES

Achenbach, T. M. (1991). Manual for the Youth Self-Report and 1991 profile. Burlington: University of Vermont Department of Psychiatry. *Aiken, L. S., & West, S. G.*

Achenbach, T. M., & Rescorla, L. (2001). Reliability, Internal Consistency, Cross-Informant Agreement, and Stability. *Manual for the ASEBA School -Age Forms & Profiles*.

Arbuckle, J. L. (2014). Amos [Computer Program]. Chicago: IBM SPSS.

Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does High Self-Esteem Cause Better Performance, Interpersonal Success, Happiness, or Healthier Lifestyles? *Psychological Science in the Public Interest, 4*(1), 1–44. doi:10.1111/1529-1006.01431

Bennett, D. H., & Holmes, D. S. (1975). Influence of denial (situation redefinition) and projection on anxiety associated with threat to self-esteem. *Journal of Personality and Social Psychology, 32*(5), 915–921. doi:10.1037/0022-3514.32.5.915

Biederman, J., Petty, C. R., Clarke, A., Lomedico, A., & Faraone, S. V. (2011). Predictors of

Persistent ADHD: An 11-year Follow-up Study. *Journal of Psychiatric Research*, *45*(2), 150–155. doi:10.1016/j.jpsychires.2010.06.009.Predictors

Blascovich, J., & Tomaka, J. (1991). Measures of self-esteem. In *Measures of personality and social psychological attitudes* (1st ed., pp. 115–160).

Bolognini, M., Plancherel, B., Bettschart, W., & Halfon, O. (1996). Self-esteem and mental health in early adolescence : *Journal of Adolescence*, 233–245.

Burish, T., & Houston, K. (1979). Causal projection , similarity projection , and coping with threat to self-esteem '. *Journal of Personality*, *47*(1), 57–70.

Cooley, C. H. (1902). *Human nature and the social order*. New York: Scribner and Sons.

Derdikman-Eiron, R., Indredavik, M. S., Bratberg, G. H., Taraldsen, G., Bakken, I. J., & Colton, M. (2011). Gender differences in subjective well-being, self-esteem and psychosocial functioning in adolescents with symptoms of anxiety and depression: Findings from the Nord-Trøndelag health study. *Scandinavian Journal of Psychology*, *52*(3), 261–267. doi:10.1111/j.1467-9450.2010.00859.x

Dumont, M., & Provost, M. A. (1999). Resilience in Adolescents : Protective Role of Social Support , Coping Strategies , Self-Esteem , and Social Activities on Experience of Stress and Depression, *28*(3), 343–363.

Faraone, S. V., Biederman, J., & Mick, E. (2005). The age-dependent decline of attention deficit hyperactivity disorder: a meta-analysis of follow-up studies. *Psychological Medicine*, *36*(02), 159. doi:10.1017/S003329170500471X

Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2003). A new rating scale for adult resilience: what are the central protective resources behind healthy adjustment? *International Journal of Methods in Psychiatric Research*, *12*(2), 65–76. doi:10.1002/mpr.143

Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). *The causes and consequences of a need for self-esteem: A terror management theory. Public self and private self.* Springer New York.

Greenberg, J., Solomon, S., Pyszczynski, T., Rosenblatt, A., Burling, J., Lyon, D., … Pinel, E. (1992). Why do people need self-esteem? Converging evidence that self-esteem serves an anxiety-buffering function. *Journal of Personality and Social Psychology*, *63*(6), 913–922. doi:10.1037/0022-3514.63.6.913

Harpin, V., Mazzone, L., Raynaud, J.-P., Kahle, J., & Hodgkins, P. (2013). Long-Term Outcomes of ADHD: A Systematic Review of Self-Esteem and Social Function. *Journal*

of Attention Disorders, (X), 1–2. doi:10.1177/1087054713486516

Harter, S. (1994). The directionality of the link between self-esteem and affect: Beyond causal modeling. In *Rochester symposium on developmental psychopathology* (pp. 333–369).

Hechtman, L., Weiss, G., & Perlman, T. (1980). Hyperactives as young adults: Self-esteem and social skills. *The Canadian Journal of Psychiatry*, *25*(6), 478–483.

IBM. (2012). SPSS Statistics. Armonk, NY: IBM Corp.

James, W. (1890). *Principles of Psychology. The consciousness of self.* Retrieved from http://cosmology.com/Consciousness123.html

Klina, R.B. (2010). *Principles and practice of structural equation modeling:* Guilford Press

Konrad, K., & Eickhoff, S. B. (2010). Is the ADHD brain wired differently? A review on structural and functional connectivity in attention deficit hyperactivity disorder. *Human Brain Mapping*, *31*(6), 904–916. doi:10.1002/hbm.21058

Larsson, J.-O., Larsson, H., & Lichtenstein, P. (2004). Genetic and environmental contributions to stability and change of ADHD symptoms between 8 and 13 years of age: a longitudinal twin study. *Journal of the American Academy of Child and Adolescent Psychiatry*, *43*(10), 1267–75. doi:10.1097/01.chi.0000135622.05219.bf

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping.* Springer publishing company.

Mazzone, L., Postorino, V., Reale, L., Guarnera, M., Mannino, V., Armando, M., … Vicari, S. (2013). Self-Esteem Evaluation in Children and Adolescents Suffering from ADHD. *Journal List Clin Pract Epidemiol Ment Health v. Clin Pract Epidemiol Ment Health*, *9*(9), 96–102. doi:10.2174/1745017901309010096

Polanczyk, G., De Lima, M. S., Horta, B. L., Biederman, J., & Rohde, L. A. (2007). The worldwide prevalence of ADHD: A systematic review and metaregression analysis. *American Journal of Psychiatry*, *164*(6), 942–948. doi:10.1176/appi.ajp.164.6.942

Ranøyen, I. (2015). *Ingunn Ranøyen Internalizing Symptoms in Adolescence Familial Aggregation and Other Thesis for the degree of Philosophiae Doctor*. Norwegian University of Science and Technology Faculty of Medicine.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring Global Self-Esteem: Construct Validation of a Single-Item Measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, *27*(2), 151–161. doi:10.1177/0146167201272002

Rosenberg, M. (1965). *Rosenberg Self-Esteem Scale*. *New York*. doi:/S0034-

98872009000600009

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry 57(3)*, 316–331.

Rutter, M. (2007). Resilience, competence, and coping. *Child Abuse and Neglect, 31*(3), 205–209. doi:10.1016/j.chiabu.2007.02.001

Ryan, R. M., & Brown, K. W. (2003). Why we don't need self-esteem: On Fundamental Needs, Contingent Love, And Mindfulness. *Psychological Inquiry*. Retrieved from http://exordio.qfb.umich.mx/archivos pdf de trabajo umsnh/aphilosofia/2007/autoestima/Fundamental Needs.pdf

Schei, J., Novik, T. S., Thomsen, P. H., Lydersen, S., Indredavik, M. S., & Jozefiak, T. (2015). What Predicts a Good Adolescent to Adult Transition in ADHD? The Role of Self-Reported Resilience. *Journal of Attention Disorders*. doi:10.1177/1087054715604362

Schmitt, D. P., & Allik, J. (2005). Simultaneous administration of the Rosenberg Self-Esteem Scale in 53 nations: exploring the universal and culture-specific features of global self-esteem. *Journal of Personality and Social Psychology, 89*(4), 623–642. doi:10.1037/0022-3514.89.4.623

Seiffge-Krenke, I. (2000). Causal links between stressful events, coping style, and adolescent symptomatology. *Journal of Adolescence, 23*(6), 675–691. doi:10.1006/jado.2000.0352

Skrove, M., Romundstad, P., & Indredavik, M. S. (2013). Resilience, lifestyle and symptoms of anxiety and depression in adolescence: The Young-HUNT study. *Social Psychiatry and Psychiatric Epidemiology, 48*(3), 407–416. doi:10.1007/s00127-012-0561-2

Slomkowski, C., Klein, R. G., & Mannuzza, S. (1995). Is self-esteem an important outcome in hyperactive children? *Journal of Abnormal Child Psychology, 23*(3), 303–315. doi:10.1007/BF01447559

Sowislo, J. F., & Orth, U. (2012). Does Low Self-Esteem Predict Depression and Anxiety? A Meta-Analysis of Longitudinal Studies. *Psychological Bulletin, 139*(1), 213–240. doi:10.1037/a0028931

Sowislo, J. F., & Orth, U. (2013). Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychological Bulletin, 139*(1), 213–40. doi:10.1037/a0028931

Stenseng, F., Belsky, J., Skalicka, V., & Wichstrøm, L. (2014). Social Exclusion Predicts Impaired Self-Regulation: A 2-Year Longitudinal Panel Study Including the Transition

from Preschool to School. *Journal of Personality*, 1–9. doi:10.1111/jopy.12096

Tambs, K. (2004). Valg av spørsmål til kortversjoner av etablerte psykometriske instrumenter [Choices of questions for short versions of well-established psychometric instruments]. In *Ubevisst sjeleliv og bevisst samfunnsliv. Psykisk hele i en sammenheng. Festskrift til Tom Sørensen på hans 60-års dag* (pp. 217–229). Ubevisst sjeleliv og bevisst samfunnsliv. Psykisk hele i en sammenheng. Festskrift til Tom Sørensen på hans 60-års dag.

Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next? In *Journal of health and social behavior. Extra Issue: Forty Years of Medical Sociology: The State of the Art and Directions for the Future* (pp. 53–79). American Sociological Association. Retrieved from http://www.jstor.org/stable/2626957?seq=1#page_scan_tab_contents

Tseng, W.-L., & Kawabata, Y. (2014). Symptoms of attention-deficit/hyperactivity disorder and peer functioning: a transactional model of development. *Journal of Abnormal Child Psychology*, *42*(8), 1353–1365.

Veselska, Z., Geckova, A. M., Orosova, O., Gajdosova, B., van Dijk, J. P., & Reijneveld, S. A. (2009). Self-esteem and resilience: The connection with risky behavior among adolescents. *Addictive Behaviors*, *34*(3), 287–291. doi:10.1016/j.addbeh.2008.11.005

von Soest, T. (2005). Rosenbergs selvfølelsesskala: Validering av en norsk oversettelse. *Tidsskrift for Norsk Psykologforening, 2*(42), 226–228.

Waschbusch, D. A., Andrade, B. F., & King, S. (2012). Attention-deficit/ hyperactivity disorder. In *Child and Adolescent Psychopathology: Theoretical and Clinical Implications* (pp. 55–77). Routledge. Retrieved from https://books.google.no/books?id=7t1hoFjf0XsC&lpg=PA52&ots=mxJZkp0UKJ&dq=Waschbusch 2006 andrade&lr&hl=no&pg=PA52#v=onepage&q&f=false

Wehmeier, P. M., Schacht, A., & Barkley, R. A. (2010). Social and Emotional Impairment in Children and Adolescents with ADHD and the Impact on Quality of Life. *Journal of Adolescent Health*, *46*(3), 209–217. doi:10.1016/j.jadohealth.2009.09.009

Willcutt, E. G. (2012). The prevalence of DSM-IV attention-deficit/hyperactivity disorder: a meta-analytic review. *Neurotherapeutics*, *9*(3), 490–499.

Young, S. (2005). Coping strategies used by adults with ADHD. *Personality and Individual Differences*, *38*(4), 809–816. doi:10.1016/j.paid.2004.06.005