



**Líkamsímynd og megrun meðal framhaldsskólanema
Þróun á tímabilinu 2000-2010**

Guðrún Ingólfssdóttir

**Lokaverkefni til Cand.psych-gráðu
Sálfræðideild
Heilbrigðisvísindasvið**



HÁSKÓLI ÍSLANDS

Líkamsímynd og megrun meðal framhaldsskólanema
Þróun á tímabilinu 2000-2010

Guðrún Ingólfssdóttir

Lokaverkefni til Cand.psych-gráðu í sálfræði

Leiðbeinendur: Andri Steinþór Björnsson

Bryndís Björk Ásgeirsdóttir

Sálfræðideild

Heilbrigðisvísindasvið Háskóla Íslands

Júní 2013

Ritgerð þessi er lokaverkefni til Cand.psych gráðu í sálfræði og er óheimilt að afrita ritgerðina á nokkurn hátt nema með leyfi rétthafa.

© Guðrún Ingólfssdóttir 2013

Prentun: Háskólaprent

Reykjavík, Ísland 2013

Formáli

Rannsóknin er lokaverkefni í Cand.psych námi í klínískri sálfræði við Sálfræðideild Háskóla Íslands. Rannsóknin byggir á gögnum úr gagnagrunni „Rannsóknar og greiningar“ (R&G). Gögnin eru svör 16-19 ára framhaldsskólanema frá 26 framhaldsskólum á Íslandi við spurningum um líkamsímynd, megrun og tengdar breytur úr könnunum „Ungt fólk“. Spurningakannanirnar voru lagðar fyrir framhaldsskólanema víðs vegar um landið á fjórum tímapunktum að hausti til árin 2000, 2004, 2007 og 2010. Leiðbeinendur mínir voru dr. Andri Steinþór Björnsson og dr. Bryndís Björk Ásgeirsdóttir. Ég þakka þeim fyrir mjög gott samstarf.

Reykjavík, þann 1. júní 2013,

Útdráttur

Markmið: Tilgangur rannsóknarinnar var að meta breytingar á líkamsímynd og tíðni megrunar meðal íslenskra unglinga á aldrinum 16-19 ára á árunum 2000-2010. **Aðferð:** Borin voru saman gögn „Rannsókna og greiningar“ frá spurningakönnunum sem lagðar voru fyrir nemendur í 26 framhaldsskólum víðs vegar á landinu á fjórum tímavörðum (2000, 2004, 2007 og 2010). Alls tóku 33.381 nemendur þátt í rannsókninni; 16.085 drengir og 17.615 stúlkur. Meðalaldur þátttakenda var 17,3 ár. **Niðurstöður:** Líkamsímynd 16-19 ára unglinga á Íslandi batnaði marktækt á þeim 10 árum sem rannsóknin náði yfir. Stúlkur mældust með neikvæðari líkamsímynd en drengir á öllum tímavörðum. Megrun var mun algengari meðal stúlkna en drengja á öllum tímavörðum. Hlutfall stúlkna sem hafði farið í megrun síðastliðna 12 mánuði minnkaði hins vegar marktækt á tímabilinu en jókst marktækt meðal drengja þannig að bil milli kynja minnkaði. **Ályktanir:** Líklegt er að ólíkar ástæður búi að baki megrun og neikvæðri líkamsímynd hjá kynjunum sem geti skýrt kynjamun í þróun og tíðni þessara þátta.

Efnisyfirlit

Formáli.....	3
Útdráttur.....	4
Efnisyfirlit.....	5
Abstract.....	6
Keywords	6
Introduction.....	6
Method.....	8
Participants.....	8
Measures	8
Procedure	9
Statistical Analysis.....	9
Results	10
Discussion.....	13
References.....	16

Change in body image and dieting among 16-19 year-old students from 2000 to 2010

Abstract

The aim of the study was to evaluate trends in body image and dieting among 16-19-year-old students in Iceland from 2000 to 2010. Data from four cross-sectional surveys conducted among Icelandic students in 26 high schools/junior colleges using four time points were compared to examine changes in body image and dieting. In total, 33,381 students with the mean age of 17.3 years participated. Body image became significantly more positive over the 10-year period for both genders. At all time points, females reported more negative body image than males and a higher proportion of dieters were females than males. There was a decrease in the frequency of dieting among females over time but an increase among males, resulting in a narrower gender gap in dieting. Further examination of these trends in body image and dieting may reveal differences in causal mechanisms behind negative body image and dieting between the genders.

Keywords

Body Image, Dieting, Adolescents, Iceland, Body dissatisfaction, Trends

Introduction

Negative body image and dieting are factors that have been found to increase the risk of developing eating disorders (Stice, Ng, & Shaw, 2010; Stice, Marti, & Durant, 2011). Adolescent females generally report a more negative body image than adolescent males (Storvoll, Strandbu, & Wichstrøm, 2005) as well as a higher prevalence of dieting (Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth, 2011) which puts them at elevated risk for developing eating disorders (Smink, Hoeken, & Hoek, 2012).

The change over time in the frequency and severity of risk factors for eating disorders among different age groups has implications for prevention efforts and health promotion. Examinations of body image trends over time, which have mainly focused on North American populations, indicate that men's body image has remained quite stable since the 1970's (Cash, Morrow, Hrabosky, & Perry, 2004; Feingold & Mazzella, 1998; Neighbors, Sobal, Liff, & Amiraian, 2008; Rozin, Trachtenberg, & Cohen, 2001). Women's overall body image on the other hand became more negative from the 1970's until the mid-1990's (Feingold & Mazzella, 1998; Rozin et al., 2001) but following that

period, some aspects of their body image seem to have improved, such as decreased preoccupation with being overweight (Cash et al., 2004; Neighbors et al., 2008).

Two recent Scandinavian cross-sectional population studies examined change in body image over time in adolescence (Asgeirsdottir, Ingolfsson, & Sigfusdottir, 2012; Storrø et al., 2005). The first study, which was conducted among 13-19-year-old adolescents in Norway, comparing data from two time points, found a higher proportion of adolescents having both a very positive and very negative body image in 2002 than 1992 (Storrø et al., 2005). The second study was conducted among 14- and 15-year-old Icelandic adolescents, using five time points between 1997 and 2010 (Asgeirsdottir et al., 2012). Males and younger adolescents reported more positive body image than females and older adolescents at all time points. Body image became more positive among both genders over the period, with a more pronounced change in females' body image, resulting in a narrower gap between the genders.

As previously stated, recent findings indicate a trend towards a more positive body image, especially among females (Asgeirsdottir et al., 2012; Cash et al., 2004; Neighbors et al., 2008). This, paired with results from longitudinal studies indicating that negative body image puts adolescents at risk for unhealthy weight management (such as dieting and less physical activity; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006; Neumark-Sztainer, Wall, Haines, Story, & Eisenberg, 2007), suggests that dieting frequency may have decreased during the same period. However, few studies have examined trends in dieting over time. Results from a cross-sectional study conducted among North American college students indicated significant reductions in dieting and eating disorder symptoms among both genders from 1982 to 1992 (Heatherton & Nichols, 1995). In contrast, a cross-sectional study examining high school students in South Carolina using five time points between 1991 and 1999 indicated an increase in dieting among both genders (Rafiroiu, Sargent, Parra-Medina, Valois, & Drane, 2007).

There is little information available regarding changes in dieting and body image in mid-and late adolescence from the beginning of this century to the present day. The current study is carried out among a small and quite homogeneous adolescent population as a part of unique and systematic population-based studies in Iceland. This study seeks to examine trends in body image and dieting over a period of 10 years by using the same methodology and instruments to survey four cohorts of students in 26 high

schools/junior colleges. In line with the aforementioned study examining 14-15 year olds in Iceland (Asgeirsdottir et al., 2012), it was hypothesized that body image among 16-19-year-old adolescent females and males would become more positive from 2000-2010, with a more prominent change among females than males. Accordingly, it was also hypothesized that dieting frequency would decrease among both genders during the same period. Furthermore, it was hypothesized that being female and being older would independently predict a more negative body image (Asgeirsdottir et al., 2012) and consequently more frequent dieting (Neumark-Sztainer et al., 2011). Finally, it was hypothesized that more negative body image would predict dieting during the last year among both genders but be a stronger predictor for females than males (McCabe & Ricciardelli, 2005).

Method

Participants

This study analyzed data from four cross-sectional national surveys of Icelandic adolescents. Data were collected among 16-19-year-old students at four time points from the same 26 high schools/junior colleges located in all parts of the country. The number of participants and percentage of the total student population in Iceland of 16-19-year olds were as follows (by year): 7130 (55.6%) in 2000, 8718 (64.5%) in 2004, 8840 (58.3%) in 2007 and 9113 (57.7%) in 2010. In total, 33,381 students participated in the study; 16,085 (47.7%) males and 17,615 (52.3%) females. The participants' mean age was 17.3 years.

Measures

Body Image. The body image scale, used in the study, consisted of five questions from the Body and Self-Image subscale of the Offer Self-Image Questionnaire (OSIQ) (Offer, Ostrov, & Howards, 1977). The OSIQ self-report inventory measures psychological adjustment of adolescents and has been found to have a high reliability (Patton & Noller, 1994) and moderate discriminant validity (Laukkanen, Peiponen, Aivio, Viinamäki, & Halonen, 1999). The Body and Self-Image subscale used in this study was abbreviated from nine to five items on the basis of an item analysis of pilot data from Icelandic adolescents, yielding acceptable internal consistency and validity (Thorlindsson, Karlsson, & Sigfusdottir, 1994). The five questions were translated into

Icelandic and the participants were asked how well the following statements described them: “When I think about how I will look in the future, I am happy”, “I frequently feel ugly and unattractive”, “I am proud of my body”, “I am happy with the way my body has changed in recent years” and, “I feel strong and healthy.” A four-point response scale was used in this study (1 = *Describes me very well* to 4 = *Does not describe me at all*) instead of a six-point response scale as used in the OSIQ. Four of the items were reverse-coded and combined with the fifth item (“I frequently feel ugly and unattractive”) into a 0-15 scale with higher scores reflecting more positive body image. The scale had a satisfactory internal consistency in the four surveys (Chronbach’s alphas= .77 to .80). A factor analysis of the five items indicated a single factor, explaining 54% of the total variance (eigenvalue= 2.7), with factor loadings of items ranging from .67 to .82. Earlier studies have also supported adequate internal consistency and criterion validity of this instrument (Asgeirsdottir et al., 2012; Vilhjalmsón, Kristjansdóttir, & Ward, 2012).

Dieting. In the current study, dieting was measured by asking participants: “Have you gone on a diet over the last 12 months”? Responses were divided into four categories but this study dichotomized the responses into non-dieters (the response: “no, never”) and dieters (other responses).

Demographic variables. The demographic variables in this study included gender and age.

Procedure

The four surveys were carried out as part of the National Survey of Icelandic Adolescents, “Youth in Iceland“. After obtaining informed consent, teachers and research assistants distributed anonymous questionnaires to students who were present in class during the days of the surveys. The students put them in envelopes and sealed them after completing the survey. The data were collected in accordance with the Privacy and Data Protection Authority in Iceland, under the direction of the Icelandic Centre for Social Research and Analysis in cooperation with the Ministry of Education.

Statistical Analysis

Analysis of variance (ANOVAs) and Scheffe’s post-hoc tests were used to test differences in mean scores of the body image scale between years for females and males

separately. The ANOVAs were followed up by three multiple linear regression models testing for main and interaction effects of study year, age and gender (male = 0 and female = 1), with the body image scale serving as the dependent variable. All the necessary underlying assumptions of linear regression models were met.

A chi square test was used to test for difference in the proportion of dieters between years for males and females separately. Since the data indicated change in dieting in the opposite direction for males and females, binary logistic regression models were carried out for the genders separately testing for main effects of year, age and body image, with dieting over the last year serving as the dependent variable. Finally, to test if there were interactions between gender and the variables body image, year and age, a binary logistic model was carried out without separating the genders.

Results

The mean levels on the body image scale increased significantly between 2000 and 2010 for both genders, indicating more positive body image among 16-19-year-old students in 2010 than in 2000 (see Table 1). There was an increase in the mean level of the body image scale for both genders until 2007, with no significant changes between the years 2007 and 2010 for either gender.

Table 1. Descriptive statistics and results from ANOVAs and Scheffe's post-hoc tests (standard errors in parentheses) showing mean levels of body image from 2000 to 2010 for males and females.

Gender	Year	N	Body Image		Difference between means			
			Mean	SD	X ₀₀ -X ₀₄	X ₀₄ -X ₀₇	X ₀₇ -X ₁₀	X ₀₀ -X ₁₀
Males ^a	2000	3241	9.55	2.83	-0.30 (.07) $p < .001$	-0.61 (.06) $p < .001$	-0.01 (.06) $p > .05$	-0.92 (.07) $p < .001$
	2004	4106	9.85	2.77				
	2007	4060	10.46	2.84				
	2010	4134	10.47	2.93				
Females ^b	2000	3706	7.99	2.95	-0.24 (.07) $p < .001$	-0.39 (.06) $p < .001$	0.10 (.06) $p > .05$	-0.83 (.07) $p < .001$
	2004	4414	8.23	2.98				
	2007	4540	8.91	3.04				
	2010	4638	8.82	3.06				

^aANOVA for males; $F(3, 15537) = 95.62, p < .001$ ^bANOVA for females; $F(3, 17294) = 93.49, p < .001$.

In Table 2, multivariate linear regression models are presented predicting body image among 16-19-year-old students. Model 1 shows that year linearly predicted mean levels of body image, with a more recent year predicting more positive body image. The trend remained significant after adding the variables gender and age to the model (see Model 2). Model 2 also shows that being male significantly predicted more positive body image. In Model 3, three interactions of study year, age and gender were added to the model, with none of the interactions turning out to be significant. Hence, the trend over time in body image was similar for the genders and across age.

Table 2. Multivariate linear regression models, predicting body image among adolescents.

Variables	Model 1			Model 2			Model 3		
	Body Image			Body Image			Body Image		
	<i>B</i>	<i>Std.E</i>	<i>B</i>	<i>B</i>	<i>Std.E</i>	β	<i>B</i>	<i>Std.E</i>	β
Main effects									
Year	.099	.005	.12***	.099	.005	.12***	.099	.005	.12***
Gender (female = 1)				-1.60	.032	-.26***	-1.60	.032	-.26***
Age				.027	.015	.01	.027	.015	.01
Interactions									
Year x gender							-.006	.009	.00
Year x age							.000	.004	.00
Gender x age							.007	.029	.00
<i>F(df)</i>	453.84*** (1, 32924)			968.76*** (3, 32835)			484.42*** (6, 32832)		

β = Beta, standardized coefficient; *df* = degrees of freedom; *** $p < .001$ (two-tailed test).

Table 3 shows that the proportion of adolescent dieters changed significantly between 2000 and 2010 for both genders, indicating a decrease in dieting among females but increase in dieting among males. Females were much more likely to have gone on diets over the last year than males at all time points.

Table 3. Crosstabs showing dieting over the last year by year (from 2000-2010) among males and females and results from a Chi-Square test.

Dieting over the last year				Pearson Chi-Square	
Gender	Year	N	Dieting % (n)	Value	df
Males	2000	3300	14.6 (481)	16.091**	3
	2004	4093	15.1 (618)		
	2007	4073	17.3 (706)		
	2010	4122	17.1 (703)		
Females	2000	3753	51.2 (1923)	56.984***	3
	2004	3991	52.0 (2074)		
	2007	4222	47.3 (1998)		
	2010	4365	44.8 (1954)		

df = degrees of freedom; ** $p < .01$; *** $p < .001$

In Table 4 binary logistic regression models are presented, predicting dieting over the last year separately among 16-19-year-old males and females. Model 1 shows that year predicted dieting over the last year for both genders, with dieting frequency increasing among males but decreasing among females in the period under study. The trend remained significant for both genders after adding the variables age (see Model 2) and body image (see Model 3) to the models. Furthermore, being older (see Model 2) and having more negative body image (see Model 3) significantly predicted greater likelihood of dieting over the last year among both genders. Finally, to test if there were interactions between gender and the variables body image, year and age, a binary logistic model was used without separating the genders with the same variables as in Table 4 adding three interactions to Model 3 (Gender x Body Image, Gender x Year and Gender x Age). Two of the interactions were significant and indicated that more negative body image was a stronger predictor for dieting over the last year for females than males (Gender x Body Image; $\text{Exp}(B) = .94, p < .001$) and that year was a stronger predictor for dieting over the last year for females than males (Gender x Year; $\text{Exp}(B) = .96, p < .001$).

Table 4. Binary logistic regression models, predicting dieting over the last year among adolescents.

Gender	Dieting over the last year								
	Model 1			Model 2			Model 3		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Males									
Year	.022	.006	1.022***	.021	.006	1.021***	.033	.006	1.033***
Age				.159	.020	1.172***	.168	.020	1.183***
Body Image							-.136	.008	.872***
Females									
Year	-.029	.004	.972***	-.029	.004	.971***	-.013	.004	.987**
Age				.109	.014	1.115***	.120	.015	1.127***
Body Image							-.161	.006	.851***

** $p < .01$; *** $p < .001$

Discussion

The results from this study indicated a positive linear trend in body image among 16-19-year-old Icelandic students of both genders between 2000-2010 which is in line with

other recent studies among females (Asgeirsdottir et al., 2012; Cash et al., 2004; Neighbors et al., 2008) and one recent study among adolescent males (Asgeirsdottir et al., 2012). In contrast, other recent studies among males have reported either few changes in the overall body image (Cash et al., 2004; Neighbors et al., 2008) or a polarization with a higher proportion having both a very positive and very negative body image (Storvoll et al., 2005).

The current study is the first to find a decrease in dieting over time among 16-19-year-old females while at the same time, an increase in dieting among 16-19-year-old males. Previous studies examining earlier periods have either indicated a decrease in dieting among both genders (Heatherton & Nichols, 1995) or an increase in dieting among both genders (Rafiroiu et al., 2007).

As hypothesized, and in line with earlier findings, females reported more negative body image than males (e.g., Cash et al., 2004; Neighbors et al., 2008) and were more likely to have gone on diets during the last year than males at all time points (e.g., Neumark-Sztainer et al., 2011; Von Soest & Wichstrøm, 2009).

The present study found no significant changes in the adolescents' body image across age which is congruent with other studies indicating that body image is likely to become stable or decrease less from mid-adolescence to young adulthood than from early- to mid-adolescence (Eisenberg, Neumark-Sztainer, & Paxton, 2006; Rosenblum & Lewis, 1999). On the other hand, the current results found older adolescents of both genders to be more likely to go on diets than younger ones. Earlier adolescent studies have been inconsistent for each gender, indicating either an increase in dieting or a constant prevalence of dieting with age (Neumark-Sztainer et al., 2011; Von Soest & Wichstrøm, 2009).

Finally, as hypothesized and in accordance with sociocultural influences idealizing thinness among females and muscularity among males (McCabe & Ricciardelli, 2005), the current results indicated that negative body image predicted dieting among both genders but was a stronger predictor of dieting among females than males.

Some limitations to this study need to be addressed. First, only limited aspects of body image were included in the surveys which used an abbreviated version of the Body and Self-Image subscale of OSIQ. However, the abbreviated scale has been found to have acceptable internal consistency and validity in other studies (Asgeirsdottir et al.,

2012; Vilhjalmsson et al., 2012). Second, a four-point response scale was used in the surveys instead of a six-point scale as used in the OSIQ. The four-point scale was used to increase the consistency in the response categories of the questions in the “Youth in Iceland” surveys (Thorlindsson et al., 1994). Third, the study is based on self-reports from the students and may have been contaminated by socially desirable response biases. However, the surveys were filled out anonymously and other students, teachers or research assistants were not able to see the answers.

In conclusion, the current findings indicate a positive trend from 2000-2010 in body image among 16-19-year-old Icelandic adolescents of both genders and a significant decrease in dieting among 16-19-year-old females but a significant increase in dieting among males in the same age range. However, dieting is still much more common among 16-19-year-old females than males. Further examination of these apparent trends is needed as it may assist in revealing differences in causal mechanisms behind negative body image and dieting between the genders. Also, it would be important to explore possible gender differences in the risk of developing eating disorders among dieters who have a negative body image. Understanding the underlying relationships between these factors and eating disorders could inform clinical intervention, prevention and health promotion efforts.

References

- Asgeirsdottir, B. B., Ingolfsson, G., & Sigfusdottir, I. D. (2012). Body image trends among Icelandic adolescents: A cross-sectional national study from 1997 to 2010. *Body Image*, 9(3), 404–408. doi:10.1016/j.bodyim.2012.02.002
- Cash, T. F., Morrow, J. A., Hrabosky, J. I., & Perry, A. A. (2004). How has body image changed? A cross-sectional investigation of college women and men from 1983 to 2001. *Journal of Consulting and Clinical Psychology*, 72(6), 1081–1089. doi:10.1037/0022-006X.72.6.1081
- Eisenberg, M. E., Neumark-Sztainer, D., & Paxton, S. J. (2006). Five-year change in body satisfaction among adolescents. *Journal of Psychosomatic Research*, 61(4), 521–527. doi:10.1016/j.jpsychores.2006.05.007
- Feingold, A., & Mazzella, R. (1998). Gender differences in body image are increasing. *Psychological Science*, 9(3), 190–195. doi:10.1111/1467-9280.00036
- Heatherton, T. F., & Nichols, P. (1995). Body weight, dieting, and eating disorder symptoms among college students, 1982 to 1992. *The American Journal of Psychiatry*, 152(11), 1623–1629.
- Laukkanen, E., Peiponen, S., Aivio, A., Viinamäki, H., & Halonen, P. (1999). Discriminant validity of the offer self-image questionnaire in Finnish 13-year-old adolescents. *Nordic Journal of Psychiatry*, 53(3), 197–201. doi:10.1080/080394899427205
- McCabe, M. P., & Ricciardelli, L. A. (2005). A prospective study of pressures from parents, peers, and the media on extreme weight change behaviors among adolescent boys and girls. *Behaviour Research and Therapy*, 43(5), 653–668. doi:10.1016/j.brat.2004.05.004
- Neighbors, L., Sobal, J., Liff, C., & Amiraian, D. (2008). Weighing weight: Trends in body weight evaluation among young adults, 1990 and 2005. *Sex Roles*, 59(1-2), 68–80. doi:10.1007/s11199-008-9407-5

- Neumark-Sztainer, D., Paxton, S. J., Hannan, P. J., Haines, J., & Story, M. (2006). Does body satisfaction matter? Five-year longitudinal associations between body satisfaction and health behaviors in adolescent females and males. *Journal of Adolescent Health, 39*(2), 244–251. doi:10.1016/j.jadohealth.2005.12.001
- Neumark-Sztainer, D., Wall, M., Haines, J., Story, M., & Eisenberg, M. E. (2007). Why does dieting predict weight gain in adolescents? Findings from Project EAT-II: A 5-year longitudinal study. *Journal of the American Dietetic Association, 107*(3), 448–455. doi:10.1016/j.jada.2006.12.013
- Neumark-Sztainer, D., Wall, M., Larson, N. I., Eisenberg, M. E., & Loth, K. (2011). Dieting and disordered eating behaviors from adolescence to young adulthood: Findings from a 10-year longitudinal study. *Journal of the American Dietetic Association, 111*(7), 1004–1011. doi: 10.1016/j.jada.2011.04.012
- Offer, D., Ostrov, E., & Howards, K. I. (1977). *The Offer Self-Image Questionnaire for adolescents (revised, 1977): A manual*. Chicago: Author.
- Patton, W., & Noller, P. (1994). The Offer Self-Image Questionnaire for adolescents: Psychometric properties and factor structure. *Journal of Youth and Adolescence, 23*(1), 19–41. doi:10.1007/BF01537140
- Rafiroiu, A. C., Sargent, R. G., Parra-Medina, D., Valois, R., & Drane, J. W. (2007). Trends and subgroup differences in overweight perception and weight-control behaviors among high school adolescents. *American Journal of Health Studies, 22*(4), 199–210.
- Rosenblum, G. D., & Lewis, M. (1999). The relations among body image, physical attractiveness, and body mass in adolescence. *Child Development, 70*(1), 50-64.
- Rozin, P., Trachtenberg, S., & Cohen, A. B. (2001). Stability of body image and body image dissatisfaction in American college students over about the last 15 years. *Appetite, 37*(3), 245–248. doi:10.1006/appe.2001.0426

- Smink, F. R. E., Hoeken, D. van, & Hoek, H. W. (2012). Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Current Psychiatry Reports*, 14(4), 406–414. doi:10.1007/s11920-012-0282-y
- Stice, E., Marti, C. N., & Durant, S. (2011). Risk factors for onset of eating disorders: Evidence of multiple risk pathways from an 8-year prospective study. *Behaviour Research and Therapy*, 49(10), 622–627. doi:10.1016/j.brat.2011.06.009
- Stice, E., Ng, J., & Shaw, H. (2010). Risk factors and prodromal eating pathology. *Journal of Child Psychology and Psychiatry*, 51(4), 518–525. doi:10.1111/j.1469-7610.2010.02212.x
- 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
- Thorlindsson, Th., Karlsson, Th., & Sigfusdottir, I. D. (1994). (*The value of sports for Icelandic youth*) *Um gildi íþróttar fyrir íslensk ungmenni*. Reykjavík, Iceland: Rannsóknastofnun uppeldis- og menntamála.
- Vilhjalmsson, R., Kristjansdottir, G., & Ward, D. S. (2012). Bodily deviations and body image in adolescence. *Youth & Society*, 44(3), 366–384. doi:10.1177/0044118X11402850
- Von Soest, T., & Wichstrøm, L. (2009). Gender differences in the development of dieting from adolescence to early adulthood: A longitudinal study. *Journal of Research on Adolescence (Blackwell Publishing Limited)*, 19(3), 509–529. doi: 10.1111/j.1532-7795.2009.00605.x