



Effects of sport participation on adolescent self-esteem and body-image: differences in gender and types of sports explored

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2013

BSc in Psychology

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Abstract

Sport participation has been shown to positively influence self-esteem and body-image of adolescent youth. This effect was measured in a sample of Icelandic participants, with the effects of gender and participation in individual and team sports explored. The study used previously gathered data “Ungt Fólk á Íslandi 2010” (Youth in Iceland) collected by The Icelandic Centre for Social Research in the fall of 2010. The study was implemented on a sample of 1994 participants from the previously gathered data. The Rosenberg scale of self-esteem was used to measure participants’ self-esteem and the Offer scale of body-image to measure participants’ body-image. Participants’ weekly sport participation and type of sports they practiced, individual or team-sports, were also measured. The results show that participants who practice sports on a weekly basis have significantly higher self-esteem and body-image than participants who do not. Participants who practice individual sports have significantly higher self-esteem than participants in team-sports. Male participants had significantly higher body-image than female participants.

Keywords: sport participation, self-esteem, body-image, individual-sports, team-sports

Útdráttur

Sýnt hefur verið fram á jákvæð áhrif íþróttaiðkunar á sjálfsálit og líkamsímynd. Áhrif íþróttaiðkunar á sjálfsálit og líkamsímynd ungmenna var rannsökuð, þar á meðal áhrif kyns og einstaklings- og hópíþróttar á sjálfsálit og líkamsímynd. Rannsóknin var byggð á gögnum frá Rannsóknnum og greiningu sem safnað var haustið 2010. Rannsóknin var framkvæmd á úrtaki sem samanstóð af 1994 þátttakendum. Til að mæla sjálfsálit þátttakenda var *Rosenberg scale of self-esteem* notaður og til að mæla líkamsímynd var *Offer scale of body-image* notaður. Einnig var vikuleg þátttaka í íþróttum, tegund íþróttar stundað og kyn þátttakenda mæld. Niðurstöður sýndu að þátttakendur sem stunduðu íþróttir vikulega mældust með marktækt hærri sjálfsálit og líkamsímynd en þeir sem gerðu það ekki, einnig mældust þátttakendur sem stunduðu einstaklingsíþróttir með marktækt hærri sjálfsálit en þátttakendur sem stunduðu hópíþróttir. Karlkyns þátttakendur mældust með marktækt hærri líkamsímynd en kvenkyns þátttakendur.

Lykilorð: Íþróttaiðkun, íþróttaiðkun, líkamsímynd, einstaklingsíþróttir, hópíþróttir

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Foreword and Acknowledgements

Submitted in a partial fulfillment of the requirements of the BSc Psychology degree, Reykjavík University, this thesis is presented in the style of an article for submission to peer –reviewed journal.

I would like to thank IRCA for their contribution, in giving me access to their databank ‘Ungt fólk á Íslandi 2010’.

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Effects of Sport Participation on Self-Esteem and Body-Image

Adolescence is a difficult for young people, it's a time of major change with adolescence attempting to deal with physical, social and cognitive changes all at once (Bowker, 2006).

Individual self-esteem is in development and in a fragile state as the adolescent is discovering his individuality (Berk, 2009). As indicated in a study by Badayai and Ismail, (2012) a decrease in self-esteem was found to occur during adolescence.

Self-esteem is the individual's sense of self-worth, as in how much one matters to him- or herself and to others. Self-esteem, therefore, refers to the extent to which a person values their abilities and appreciates him- or herself (Blascovich & Tomaka, 1991; Bowker, 2006). High self-esteem has been linked to many positive behaviors and life outcomes. Brown (1998) reported that individuals with high self-esteem were happier with their lives, which resulted in fewer interpersonal problems and in a higher consistency of achievements. He also reported that people with high self-esteem are more capable of forming satisfying love relationships and are less susceptible to social pressure (Brown, 1998). High self-esteem has been found to correlate with positive life outcomes and low self-esteem has been found to correlate with negative life outcomes. Low self-esteem has also been linked to the onset of depression (Brown, Bifulco, Veiel, & Andrews, 1990).

There has been an increase in research about adolescent body-image over the past two decades (Smolak, 2004). A correlation has been found between early onset of low body-image and eating disorders and depression in adulthood (Smolak, 2004). Body-image can be described as body-related self-attitudes and self-perceptions, including thoughts, beliefs, feelings and behaviors (Cash, 2004). It is affected by the persons self-esteem, interpersonal confidence, eating and exercise behaviors, emotional stability and sexual experiences (Huang, Norman, Zabinski, Calfas, & Patrick, 2007.) In today's western society the standards for attractive body-image are

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high, the attractive female body type is becoming almost impossible for most females to obtain (Tiggemann, 2004). The same high standards are being set for the male population, the muscular v-shaped body with well-developed upper-body and a full six-pack of abs is the desired shape for many adolescent males (Leit, Pope, & Gray, 2001; Pope Jr., Gruber, Choi, Olivardia, & Phillips, 1997). For both males and females this desire to look like society's standards can cause an array of psychological problems as well as physiological (Smolak, 2004). Females often experience low self-esteem as a direct cause of low body-image; they can develop anorexic and bulimic tendencies which can result in depression (Fabian & Thompson, 1989). Males are also subjective to low self-esteem because of low body-image, there are also documented cases of males developing anorexia and bulimia although they are not as frequent as with females (Vandereycken & Broucke, 1984). Low male body-image has been associated with a psychological illness known as muscle dysmorphia, where a subject feels he is not muscular enough and is, therefore, subject to steroid abuse or unhealthy dieting (Pope Jr. et al., 1997).

In the cases of self-esteem and body-image research there is a consensus that low self-esteem and low body-image can lead to adverse effects, both psychological as well as physiological (Huang et al., 2007). It is, therefore, important to examine what effects self-esteem and body-image can have on people.

Research has shown that sport participation does have a positive effect on adolescent youth; it helps promote their self-esteem as well as heightening their overall well-being (Pascarella & Smart, 1991; Slutzky & Simpkins, 2009; Taylor & Turek, 2010).

Researchers have theorized why sport participation may cause children and adults to have higher self-esteem and have higher overall well-being. They have linked it to enhancement of feelings about the physical self and come to the conclusion that sport participation increases feelings of physical competence, satisfaction with physical appearance, which can result in a rise

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in self-esteem and consequently body-image (Bowker, 2006; Jackson & Marsh, 1986; Richman, 2001; Richman & Shaffer, 2000). Sport participation has been found to reduce the risk of obesity, cardiovascular disease and other chronic diseases (Sothorn. et al., 1999; Warburton. et al., 2006). A research by McHale et al. (2005) on the involvement of seventh grade students in an urban middle-school in organized team sports found that it had positive effects on their self-esteem as well as preventive effect on substance abuse. Research on the effects of sport participation on body-image has yielded some interesting results as well. A study by Richman and Shaffer (2000) on a sample of college females showed a positive correlation between sport participation and body-image. A research by Davis and Fox (1993) on a group of adult women showed that excessive exercisers reported higher body-focus and satisfaction with their own bodies than non-exercisers, which can lead to an increase in body-image.

Researchers have also theorized on the effects of certain types of sports activity on self-esteem and body-image. In a meta-analysis, Slutzky and Simpkins (2009) suggested that team sports had a greater effect on the participants self-esteem because time spent in team sports provided clearer information on the individual's sporting abilities. Contradicting these results is a theory by Zaccaro, Peterson, and Walker (1987) which argues that participation in individual sports provides clearer information about ones sporting ability than team sports because the results cannot be accredited to a team effort. A research by Boone and Leadbeater (2006) showed a reduction in body-dissatisfaction after team-sport participation. They theorized this was due to the effects of positive experiences, skill development, coaching and peer support, gained from team sports.

The present study examines the effects of sport participation in Icelandic youth on self-esteem and body-image of males and females. Research has shown that sport participation has a positive effect on self-esteem and body-image of both males and females (Davis & Fox, 1993;

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McHale et al., 2005; Richman & Shaffer, 2000; Slutzky & Simpkins, 2009). Therefore, it is hypothesized that the same result will be obtained in this study. Participants' self-esteem and body-image will be positively affected by sport participation and it will have more effect on self-esteem and body-image of male participants than female participants.

The study also examines the differential effects of individual and team sports on self-esteem and body esteem. Previously cited research by Slutzky and Simpkins (2009) indicated that team sport had a greater effect on the self-esteem, as they concluded that participants who engage in team sports have higher self-esteem than participants in individual sports. Similar results have been found on the effects of team sport participation on body-dissatisfaction, where it had decreased due to team sport participation (Boone & Leadbeater, 2006). Based on these results it is hypothesized that those who participate in team sports will have higher self-esteem and body-image than those who participate in individual sports and there will be no gender difference found in terms of that effect.

Method

Participants

The original study consisted of 11,388 high school students or 70.5% of all Icelandic high school students enrolled in the Icelandic high school system in the fall of 2010 (Vímuefnatökn ungmenna í framhaldskólum, 2011). A simple random sample was taken from that group for the present study which consisted of 1994 participants, 1034 females and 936 males. Participants were almost all born between the years 1986 and 1996, 12 participants were outside that range, 72 answers were missing. Participants mean age was 17 years (Vímuefnatökn ungmenna í framhaldsskólum, 2011).

Instruments and Measures

The questionnaire Ungt Fólk á Íslandi 2010 (Youth in Iceland 2010) was constructed by

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The Icelandic Centre for Social Research and Analysis (ICSRA. Rannsóknir og greining). It is a reformed edition of a questionnaire which was used in identical studies in 2004 and 2007 by ICSRA. The questionnaire consisted of over 600 items, regarding participants overall well-being. Items regarding self-esteem, body image, sport participation, types of sport activity, age and gender (see Appendices A, B, C and D) were selected for the present study from the comprehensive questionnaire *Ungt Fólk á Íslandi 2010 (Vímuefnanotkun ungmenna í framhaldsskólum, 2011)*.

The Rosenberg scale of self-esteem (RSE) was used to measure participants' self-esteem. The RSE had ten statements, five worded negatively (e.g. all in all, I am inclined to feel that I am a failure) and five positively (e.g. I take a positive attitude toward myself) (see Appendix A). The RSE has received more empirical validation than any other self-esteem scale and, therefore, was the best choice for this study (Robins, Hendin, & Trzesniewski, 2001). For an assessment on body-image the Offer scale of body-image was used (Offer, 1972). The scale consist of five statements which measure the participants' body-image. It had four positively worded statements and one negatively (see Appendix B).

For an assessment on sport or physical activity the statements "do you participate in sports activity" was used because it requires the participant to give an exact number of weekly sports activities. The participants were divided into four groups based on their weekly sport participation; participants who never engage in sports, those who do 1-2x a week, 3-6x a week and every day (see Appendix C).

To measure what kind of sports activity participants engaged in a list of the 38 most popular sports in Iceland was used. The list was divided in to two subgroups; individual sports and team sports (see Appendices C and D).

Procedure

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The survey was implemented in the fall of 2010 where questionnaires were sent to all Icelandic high-schools with comprehensive instructions on how to administer the questionnaire in the classroom. Teachers and research assistants distributed the questionnaires to the students who were present in class during the days of the survey. Informed consent had been given before the students could start the questionnaire. The students were required not to put their name on the questionnaire. After completion, students had to seal the questionnaire in a blank envelope to ensure full anonymity.

Analysis

The data had to be manipulated so that efficient data analysis could take place. To assess the accuracy of the Rosenberg scale a factor analysis was performed on the ten statements, the factor loadings were examined and made sure they all were .4 or over. The factor loadings were all in the .5 to .8 range. The scale contained ten statements which assess the participant's global self-esteem (see Appendix A).

To measure the overall score of each participant the statements were computed to give one score for each of them. The scale has four possible items of scoring and each statement gave a score of one to four, one for 'strongly agree', two for 'agree', three for 'disagree' and four for 'strongly disagree'. In the RSE the positively worded questions were recoded, which had the effect that high RSE scores meant low participant self-esteem. This was done to ease interpretation of the results.

The body-image of participants was measured using the Offer scale of body-image (see Appendix B). One statement was negatively worded and was recoded to match the other four statements which were positively worded; this made low scores on the scale mean high body-image of the participants.

To measure sport participation within the sample an item of the questionnaire was used

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which measured the weekly sport participation of the participants. The item offered six answering possibilities which were recoded to make up only four. Answers two, (1x week) and three (2x a week) were recoded to a single group, so were answers three (3x a week) and four (4-6x a week). Answers one (never) and six (every day) were not changed (see Appendix C). To measure Hypothesis I “Participants’ self-esteem and body-image will be positively affected by sport participation and that it will have more effect on the self-esteem and body-image of male participants than female participants” a factorial ANOVA was used implementing a Bonferroni post-hoc test. The independent variables were sport participation and gender, and the dependent variables were participant’s self-esteem and body-image.

To measure the second hypothesis “those who participate in team sports will have higher self-esteem and body-image than those who participate in individual sports and there will be no gender difference found in terms of that effect” a factorial ANOVA was also used. The independent variables were the type of sport and gender and the dependent variable was participant’s self-esteem and body-image. Participants were divided into two groups, individual sports and team sports, and mean scores gathered for male and female participants. Only participants who engaged in sports or physical activity three times a week or more were eligible for this analysis. To separate those who engaged in sports or physical activity three times or more a week from those who did not, the variables for each sport type had to be recoded to match the new standards. The variables were recoded to separate those who answered 3x a week, 4 - 6x a week and every day from those who did not.

Results

Participants’ self-esteem score ranging from 10 to 22 were considered ‘high-self-esteem’, scores ranging 23 to 25 were considered ‘medium self-esteem’ and scores ranging from 26 to 40 were considered ‘low self-esteem’ (see Figure 1). The majority of participants were in the medium

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self-esteem range; more than half the sample. Close to one third of the participants were in the high self-esteem range and 21% were in the low self-esteem range.

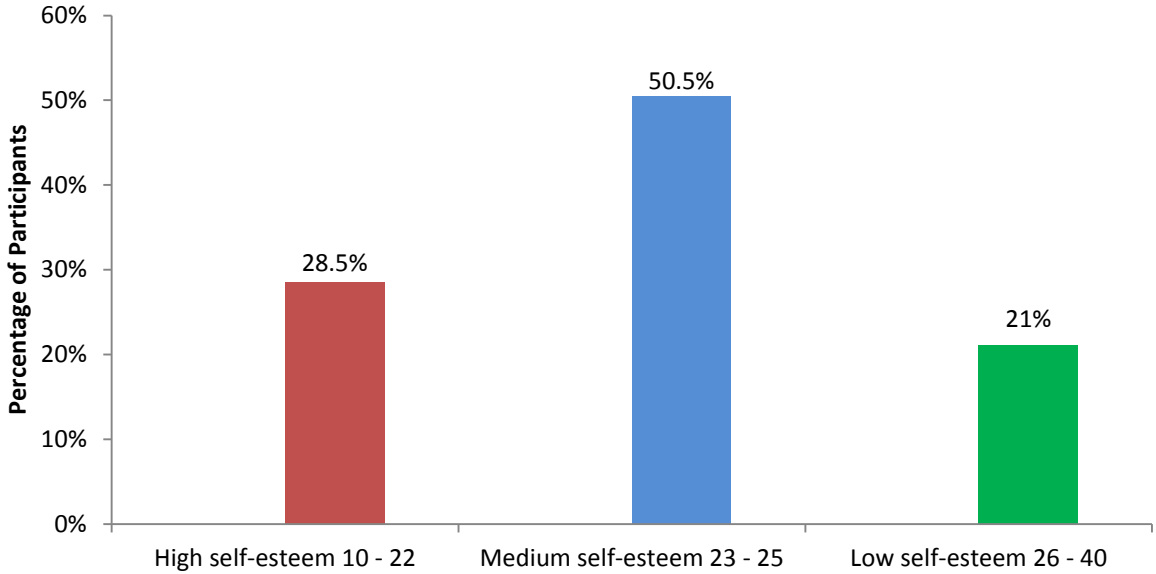


Figure 1. Participants' self-esteem

Just over one third of the sample showed high body-image on the Offer body-image scale (see figure 2). Over 20% of participants were rated as having a low body-image. The majority of participants were rated with a medium body-image.

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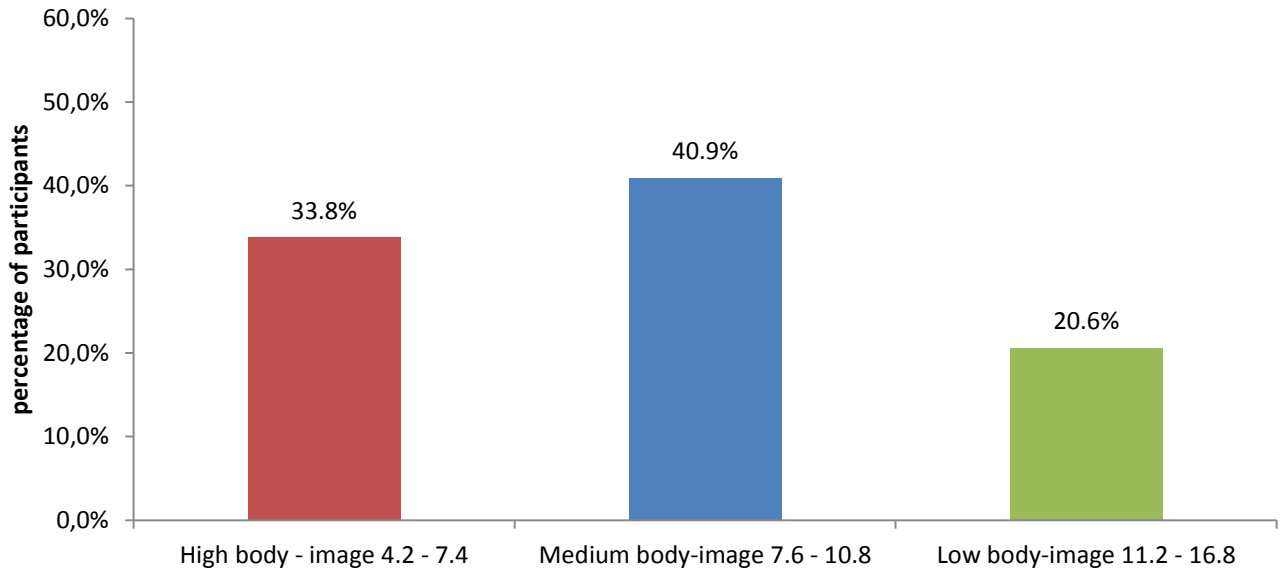


Figure 2. Participants' body-image

Participants' weekly sport participation was measured; 1872 scores were collected with 122 scores missing and an answer ratio of 93.9%. The sample seemed to contain a large group of very athletic participants. The largest group was those who participated in sports four to six times a week (see Figure 3). Although the second largest group is made up of participants who reportedly almost never partake in sports activity, the number of participants who engage in sports more than three times a week outnumber those who engage in sports two times a week or less. Participants who are physically active 3 times a week or more make up 54% of the sample and those who are physically active 2 times a week or less make up 39.9%. Participants who reportedly only participate in sport based activity or workout once a week made up the smallest group.

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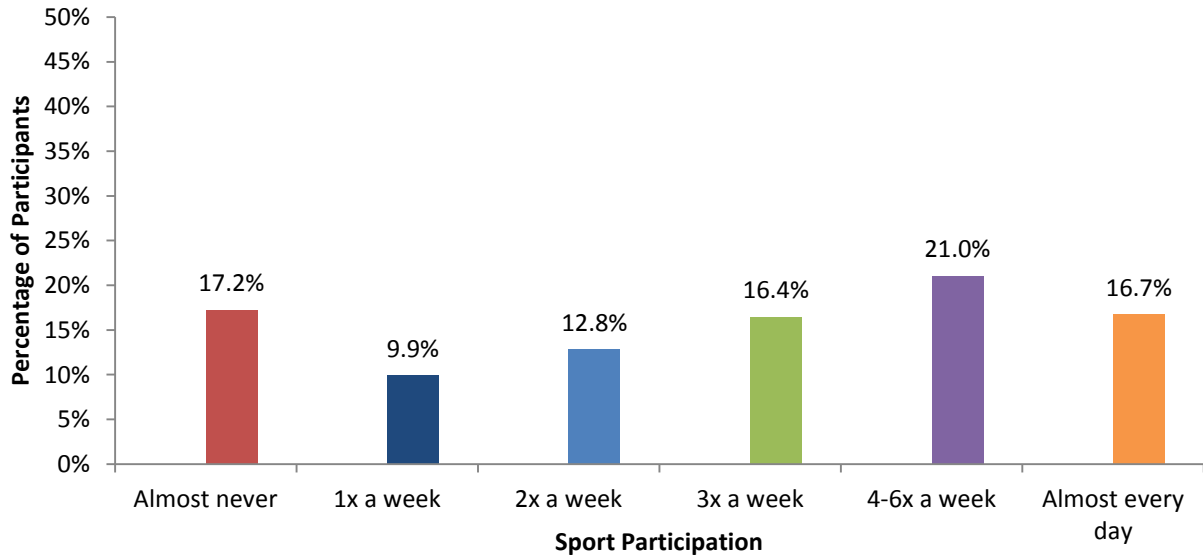


Figure 3. Sport participation on a weekly basis

Figures 4 and 5 show the percentage of those who participated in individual and team sports once a week or more. The percentages represent participation in each sport based on the total answers of each question. Participants could answer more than one item on the list, which means they could be engaging in multiple types of sports activity, so the percentage sum in both figures is well above 100%.

The most popular individual sport was weight lifting, 29.1% participants said that they lifted weights at least once a week (see Figure 4). The second most popular sport was swimming with about 16% of participants engaging in that sport at least once a week. After that came power lifting and cycling, both with a percentage of 9-10%. Sports of a more extreme nature were not so popular; like aikido (0.7%) and sky-diving (1.1%) had the lowest participation score.

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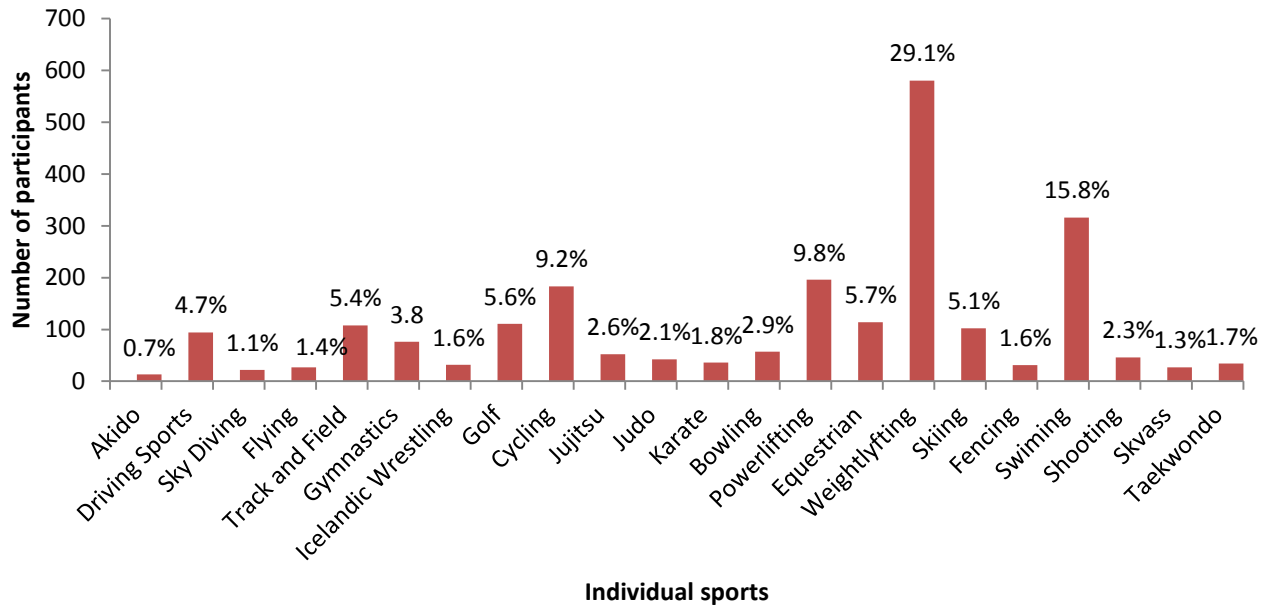


Figure 4. Percentage of those who engage in individual sports at least once a week.

Figure 5 shows the percentage of those who participated in team sports once a week or more. The percentages represent participation in each sport based on the total answers of each question. The sport with the highest participation was soccer, with 24% of participants engaging in the sport on a weekly basis. The second most popular sport was dance with 11.7% of participants engaging in that activity once or more a week. About 10% of participants played basketball at least once a week. The sports with the lowest popularity was curling with 1.9% and ice-hockey with only 1.4% (see Figure 5).

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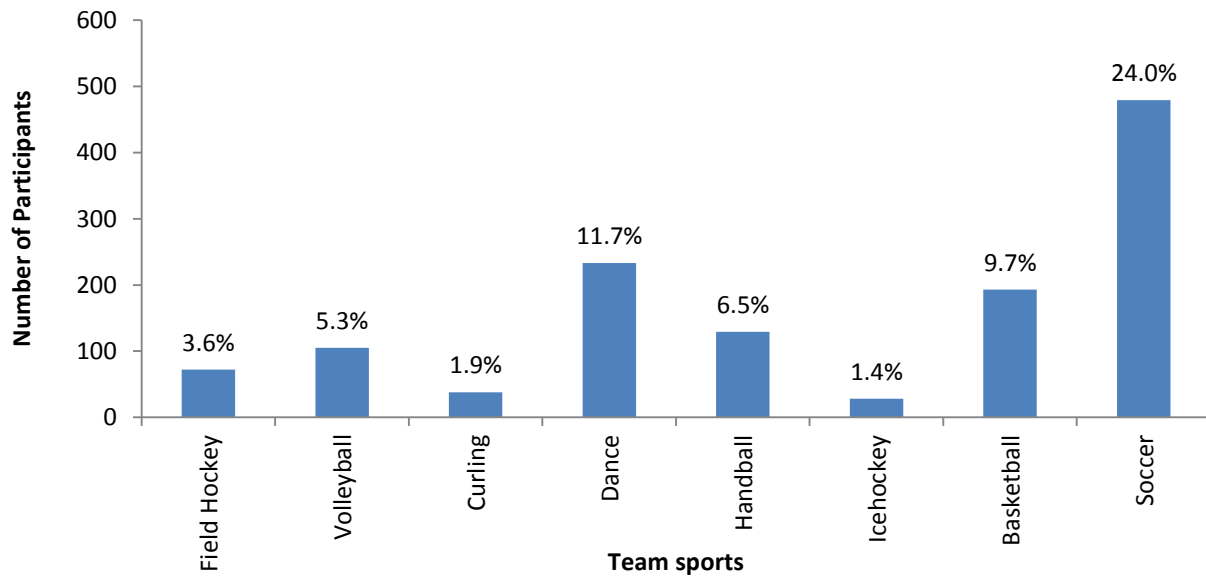


Figure 5. Percentage of those who engage in team sports at least once a week.

Table 1 displays mean scores and standard-deviations in self-esteem scores by frequency of sport participation and gender of participants. Overall scores of self-esteem for each frequency group independent of gender are indicated as total scores of self-esteem. Low scores indicate high self-esteem and high scores low self-esteem.

Table 1 indicates that participants who never engaged in sports had lower self-esteem than participants who engaged in sports every day. The data revealed a significant difference between the frequency of weekly sport participation and on self-esteem, $F(3, 1786) = 3.3, p = .019$. The largest difference in self-esteem was found between participants who engaged in sports 1-2x a week and participants who engaged in sports every day (see Table 1). Bonferroni *post-hoc* test revealed that participants who engaged in sports activity every day had significantly higher self-esteem than participants who engaged in sports activity 1-2 times a week ($p = .011$).

The mean scores for gender indicate that female participants had higher self-esteem than males, there was a .11 point difference between the genders total self-esteem score (see Table 1). However, this is not a significant difference, $F(1, 1786) = 1.3, p = .258$. There was not a

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significant interaction effect between the frequency of sport participation and gender on self-esteem, $F(3, 1786) = 0.433$, $p = .729$. This indicates that the self-esteem of males and females was not affected differently by the frequency of their weekly sport participation.

Table 1

Self-esteem Means and Standard Deviations by Frequency of Sport Participation for Males and Females

		N	M	SD
Never				
	Male	154	23.8	4.0
	Female	169	23.4	3.4
	Total	323	23.6	3.7
1-2x a week				
	Male	155	24.1	3.1
	Female	282	23.8	2.6
	Total	437	23.9*	2.8
3-6x a week				
	Male	326	23.7	3.3
	Female	388	23.5	2.9
	Total	714	23.6	3.1
Every day				
	Male	189	23.1	4.1
	Female	131	23.2	2.8
	Total	320	23.1*	3.6

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Total

Male	824	23.6	3.6
Female	970	23.5	2.9
Total	1794	23.6	3.3

* $p < .05$

Table 2 shows participants' self-esteem by gender and types of sport they engage in on a weekly basis. The total mean scores show that participants who engaged in individual sports have significantly higher self-esteem than participants who engaged in team sport (see Table 2), $F(1, 422) = 5.442, p = .02$.

This finding does not support the research hypothesis that participants who practice team sports have higher self-esteem than participants who practice individual sports as it shows the exact opposite.

Table 2 shows that male and female participants had the same mean self-esteem score in individual sports, and only a 0.1 difference in team sports. Gender was not found to have a significant effect on participants' self-esteem, $F(1, 422) = 0.001, p = .994$. There was not a significant interaction effect found between gender and type of sport on participants' self-esteem, $F(1, 422) = 0.305, p = .862$. This indicates that the self-esteem of male and female participants was not affected differently by the type of sport they engage in.

Table 2

Self-Esteem Means and Standard Deviations by Type of Sports for Males and Females

Male			Female			Total		
M	SD	N	M	SD	N	M	SD	N

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Individual	23.3	4.0	121	23.3	2.8	121	23.3	3.6	198
Team	24.1	2.8	123	24.0	2.7	123	24.0	2.8	228

Table 3 shows mean scores and standard deviations in participants’ body-image by frequency of sport participation and gender. The data revealed a significant difference between the frequency of weekly sport participation on body-image, $F(3, 1801) = 21.347, p = .000$. This indicates that the amount of sport participation in a week had an effect on the body-image of participants. Bonferroni *post-hoc* test revealed that participants who engaged in sports 3-6 times a week have significantly higher body-image than participants who never engaged in sports and who engage in sports 1-2 times a week ($p = .000$).

Participants who engaged in sports every day had a significantly higher body-image than participants who engaged in sports never, 1-2 times a week and 3-6 times a week ($p < .000$). However, a significant difference was not found between participants who never engaged in sports and those who did it 1-2 times a week. Female participants had significantly lower body-image than males in the study, as there was a mean gender difference of 1.7, $F(1, 1801) = 137.2, p = .001$.

Male body-image rose significantly higher than female body-image for males who never engaged in sports to males who engaged in sport every day. Female participants had a significantly lower body-image mean score than males in all of the groups, $F(3, 1801) = 4.04, p = .007$.

Table 3

Body-image Means and Standard Deviations by Frequency of Sport Participation for Males and Females

	N	M	SD
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Never				
	Male	154	9.1	2.5
	Female	167	10.0	2.9
	Total	321	9.5	2.8
1-2x a week				
	Male	158	8.4	2.4
	Female	289	9.8	2.6
	Total	447	9.3	2.6
3-6x a week				
	Male	329	7.8	2.5
	Female	329	7.8	2.5
	Total	721	8.7	2.7
Every day				
	Male	191	6.8	2.5
	Female	129	9.1	2.6
	Total	320	7.8	3.8
Total				
	Male	832	7.9	2.6
	Female	977	9.6	2.7
	Total	1809	8.9	2.8

Table 4 shows mean scores and standard deviations for body-image by gender and types of sport. Female participants showed significantly lower body-image compared to male participants,

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$F(1, 426) = 66.250, p < .000$.

Table 4 displays a small difference in body-image by type of sport, the total mean score for individual sports is only 0.2 lower than team sports, so these results were not significant, $F(1, 426) = .015, p = .901$. There was a large difference in mean body-image scores between males and females and types of sport. Male participants had higher body-image both in individual and team sports; the mean score difference was 2.0 in both groups (see Table 4). However, these results were not significant, $F(1, 426) = .128, p = .721$.

Table 4

Body-image Means and Standard Deviations by Type of Sports for Males and Females

	Male			Female			Total		
	M	SD	N	M	SD	N	M	SD	N
Individual	7.1	2.4	122	9.2	2.4	79	7.9	2.6	201
Team	7.2	2.3	123	9.1	2.8	106	8.1	2.7	229

Discussion

The objective of this study was to examine the effects of sport participation on self-esteem and body-image of adolescents where the effects of individual and team-sports on self-esteem and body-image are also explored. It was first hypothesized that participants' self-esteem and body-image would be positively affected by sport participation and that it would have more effect on self-esteem and body-image of male participants than female participants. The results did not support the hypothesis as there was not significant difference between male and female self-esteem.

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The second hypothesis stated that participants who practiced team-sports would have significantly higher self-esteem and body-image, and there would be no gender difference found in terms of that effect. The results, however, did not support the hypothesis as they showed the exact opposite as participants who practiced individual sports had significantly higher self-esteem than participants who practiced team-sports. The results did not reveal significant difference in body-image between participants who practiced team-sports and individual sports. However, no significant difference was found between males and females which is in accordance with the hypothesis.

The analysis revealed weightlifting to be the most practiced sport among Icelandic youth, with close to 30% participation in the sample. This popularity could be explained by participants who practice other sports and lift weights parallel to their other sports activity. Many sports programs have their participants doing strength training with weights to improve strength which can be beneficial in many competitive sports. Another explanation can be found in the evolution of both male and female body attractiveness standards. Males and female body standards have been evolving where male body physique has become more muscular and female body physique has become more toned and low on fat. This may cause the popularity of weightlifting to be high as the results show. There is no surprise that soccer is the second most practiced sport as it is the most popular sport in Icelandic society.

Participants who practice sports were found to have significantly higher self-esteem than participants who never do. This finding was not particularly surprising as previous research on the subject have shown similar results (Davis & Fox, 1993; Richman & Shaffer, 2000). This indicates that sport participation has a positive effect on self-esteem and that participants who are highly involved in sports have higher self-esteem than those who are not. Brown (1998) wrote about this effect and reported that individuals with high self-esteem were happier with their lives,

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which resulted in fewer interpersonal problems and in a higher consistency of achievements.

Therefore, adolescent athletes must show the benefits of their sport participation. An example of this effect is a study by McHale et al. (2005) on 423 seventh grade student that found that those who engaged in sports activity reported higher self-esteem than those who did not and were reported by their teachers to be more socially competent and less withdrawn. A study by Weiler (1998) on a sample of African American girls showed participants who engaged in athletic programs had higher self-esteem and showed improvement in academic achievement. Therefore participants who practice sports should experience academic and social benefits like fewer personal problems and overall happiness.

The present study revealed that sport participation has an effect on the body-image of adolescent youth as participants who practiced sports had significantly higher body-image than participants who did not. This finding is consistent to previous research, where it has been found that participants who practice sports have higher body-image, higher body-focus and more satisfaction with their bodies (Davis & Fox, 1993; Richman & Shaffer, 2000). Male participants had higher body-image than females, and they showed higher body-image as they practiced sports often in the week. The frequency of female sport participation affected their body-image as well, their body-image increased as their sport participation increased. Sport participation, therefore, has a positive effect on both genders and increased their body-image more by the number of times a week they practiced sports.

The study has thus revealed that weekly sport participation of adolescent youth has an increasing effect on both their self-esteem and body-image. Sports might, therefore, be used as an intervention tool for adolescents who suffer from low self-esteem and body-image to improve their well-being.

The effects of individual and team sports on self-esteem and body-image were examined

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as well and the results did not support previous findings on the subject. Participants who practiced individual sports showed significantly higher self-esteem than participants in team-sports. This was not expected as the second hypothesis stated that participants in team-sports would have higher self-esteem. This finding contradicts a meta-analysis study on the subject by Slutzky & Simpkins (2009) where they found that team-sports would have more positive effect on the self-esteem because time spent in team sports provided clearer information on the individual sporting abilities. The results, therefore, support the theory of Zaccaro, Peterson, and Walker (1987) that participation in individual sports provide clearer information about the individuals sporting ability than team sports because there is no team effort to take credit away from the individual and his achievements. There was no significant difference in self-esteem between males and females. Individual and team sports were not found to have significant effect on the body-image of participants. A study by Boone and Leadbeater (2006) found that team sports had a diminishing effect on body-dissatisfaction but this study did not reveal anything to support that result. The results showed, however, that female participants in both team and individual sports had significantly lower body-image than males.

The research on the effects of individual and team sports was limited by the methods used; participants could be in both individual and team-sports and be a part of both groups at the same time. This does not give a precise result as the aim was to measure the difference between the two groups. Future research should, therefore, indicate it carefully in their measurement tool that each participant can only name the sport they most frequently practice. The study did not examine or theorize on the causes behind the effects found; future research should therefore focus on the causes behind the strengthening effect of sport participation on self-esteem and body-image of Icelandic adolescence.

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Appendix A

Rosenberg scale of self-esteem

I feel that I am a person of worth, at least on an equal plane with others.

Strongly Agree Agree Disagree Strongly Disagree

I feel that I have a number of good qualities.

Strongly Agree Agree Disagree Strongly Disagree

All in all, I am inclined to feel that I am a failure.

Strongly Agree Agree Disagree Strongly Disagree

I am able to do things as well as most other people.

Strongly Agree Agree Disagree Strongly Disagree

I feel I do not have much to be proud of.

Strongly Agree Agree Disagree Strongly Disagree

I take a positive attitude toward myself.

Strongly Agree Agree Disagree Strongly Disagree

On the whole, I am satisfied with myself.

Strongly Agree Agree Disagree Strongly Disagree

I wish I could have more respect for myself.

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Strongly Agree Agree Disagree Strongly Disagree

I certainly feel useless at times.

Strongly Agree Agree Disagree Strongly Disagree

At times I think I am no good at all.

Strongly Agree Agree Disagree Strongly Disagree

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Appendix B

Offer scale of body-image

When I think of how I'll look in the future I am happy.

Strongly Agree Agree Disagree Strongly Disagree

I feel I am unattractive.

Strongly Agree Agree Disagree Strongly Disagree

I am pleased with my body.

Strongly Agree Agree Disagree Strongly Disagree

I am pleased with the physical changes that have been taking place the last few years.

Strongly Agree Agree Disagree Strongly Disagree

I feel I am strong and healthy.

Strongly Agree Agree Disagree Strongly Disagree

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Appendix C

Questions used from the questionnaire 'Ungt fólk á Íslandi 2010' (Youth in Iceland)

1. Are you a boy or a girl?

Boy Girl

2. What year were you born?

1996 1990
1995 1989
1994 1988
1993 1987
1992 1986
1991 Other _____

101. Do you participate in sports? Only mark one item

Never 1 a week 2 a week 3 a week 4-6 times a week every day

110. Do you participate in any of the following sports?

Aikido

Never 1 a week 2 a week 3 a week 4-6 times a week every day

Driving Sports

Never 1 a week 2 a week 3 a week 4-6 times a week every day

Field Hockey

Never 1 a week 2 a week 3 a week 4-6 times a week every day

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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Volleyball

Never 1 a week 2 a week 3 a week 4-6 times a week every day

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Badminton

Never 1 a week 2 a week 3 a week 4-6 times a week every day

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Table tennis

Never 1 a week 2 a week 3 a week 4-6 times a week every day

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Curling

Never 1 a week 2 a week 3 a week 4-6 times a week every day

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Dancing

Never 1 a week 2 a week 3 a week 4-6 times a week every day

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Sky-diving

Never 1 a week 2 a week 3 a week 4-6 times a week every day

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Flying

Never 1 a week 2 a week 3 a week 4-6 times a week every day

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Track and field

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Equestrian

Never	1 a week	2 a week	3 a week	4-6 times a week	every day
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Weightlifting

Never	1 a week	2 a week	3 a week	4-6 times a week	every day
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Powerlifting

Never	1 a week	2 a week	3 a week	4-6 times a week	every day
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sailing

Never	1 a week	2 a week	3 a week	4-6 times a week	every day
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Skiing

Never	1 a week	2 a week	3 a week	4-6 times a week	every day
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fencing

Never	1 a week	2 a week	3 a week	4-6 times a week	every day
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Swimming

Never	1 a week	2 a week	3 a week	4-6 times a week	every day
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Shooting

Never	1 a week	2 a week	3 a week	4-6 times a week	every day
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Appendix D

Sport groups

Individual sports

Akido
Driving Sports
Sky Diving
Flying
Track and Field
Gymnastics
Icelandic
Wrestling
Golf
Cycling
Jujitsu
Judo
Karate
Bowling
Powerlifting
Equestrian
Weightlyfting
Skiing
Fencing
Swiming
Shooting
Skvass
Taekwondo

Team sports

Field
Hockey
Volleyball
Curling
Dance
Handball
Icehockey
Basketball
Soccer

Excluded sports

Badminton
Table tennis
Sports for the handicapped
Figure skating
Sailing
Tennis
Svass