Girls’ Self-Esteem Comparison in Competitive and Recreational Gymnastics

Zeynel Amac, Nicole Anastasio, Amy Morwick, Jialin Yi

Indiana University at Bloomington
**Introduction/Purpose of Study**

Girls have a lower self-esteem than boys (Marcotte, Fortin, Potvin, & Papillion, 2002). Given this finding, much attention has been directed at determining why it is that girls have lower self-esteem than boys. Factors that affect a girls' self-esteem include, but are not limited to, the following: adjusting to the onset of puberty (Marcotte et al., 2002), methods of coping (Byrne, 2000), less attention in the classroom, feelings of inadequacy at math and science (Angelo & Branch, 2002), physical appearance (Corbin, 2002), overall support system (Marcotte et al., 2002), and feelings of competency (Corbin, 2002). The best predictor of self-esteem for girls, however, is interaction and relationship with their mothers. Additionally, positive aspects of interactions such as intimacy, acceptance, and nurturance are related to higher self-esteem (Lackovic-Grgin and Dekovic, 1994).

More interesting is the finding that girls who participate in sports in general have higher self-esteem than girls who do not. The feelings of accomplishment, sense of belonging, and acquiring of new skills that sports offer may explain this observation (Trew, Scully, Kremer, & Ogle, 1999). As a result of the magnitude of information regarding self-esteem, and the many factors that influence it, we sought to determine whether girls who compete competitively in sports have differences in self-esteem than those girls who participate recreationally in sports.

**Research Questions**
This study is guided by the following research questions: *Is there a difference in self-esteem between girls in competitive gymnastics vs. those girls who participate in gymnastics recreationally? If there is a difference, does it happen at a certain age?*

Operational definitions of self-esteem, competitive, recreational are given in this study as follows:

**Self-esteem:** We consider using Robson’s (1989) definition of self-esteem in our study: “the sense of contentment and self acceptance that results from a person’s appraisal of his own worth, significance, attractiveness, competence, and ability to satisfy his aspirations” (p. 314). Robson utilizes a questionnaire with an 8-point scale to measure these concepts.

**Competitive sports** are defined as those in which girls compete against others formally for awards and standing within their divisions. **Recreational sports** are operationally defined as those in which girls practice gymnastics regularly but do not compete against others on their team for spots, and also do not participate in competitions against other teams for places and awards.

**Importance of the study**

This study has broader as well as more specific implications. Researchers find that adolescence can have such a dramatic impact on self-esteem that some girls never recover fully. By puberty, many are unhappy with themselves (Stoller, 1998). Consequently, this could have a huge effect on the outcomes of their lives as far as their involvement with their school, attending colleges, and overall satisfaction of their life. On a smaller scale, teachers have noticed girls dropping out of competitive play in
gymnastics, favoring recreational gymnastics instead. These girls could be missing out on college scholarships, the Olympics, and possible future careers.

**Literature Review**

**Self-esteem and its measurement**

Lishner (1997) states that self-esteem consists of the evaluative judgments children make about their characteristics and qualities, including their attitude about themselves and their sense of worthiness. According to Stanley Coopersmith (Lishner 1997), a well-known early researcher, self-esteem reflects the extent to which people believe themselves to be capable, significant, successful, and worthy. For example, children may think they are poor students, good baseball players, homely children, or trustworthy friends.

People often confuse self-confidence and self-esteem. Self-confidence means that a child believes he/she can successfully carry out a behavior or a task that produces a desired result. Self-confidence is always related with a specific activity, while self-esteem refers to an overall self-judgment.

Most child development experts agree that high self-esteem is one of the most important developments in childhood. However, little information exists about the essential characteristics and determinants of positive self-esteem. Child-development experts generally categorize self-esteem within the emotional/social domain of development (Lishner, 1997). This domain includes feelings, beliefs, temperament, relationships with others, self-concept, gender identity, and moral development. Young people’s levels of social, emotional, physical, and cognitive development interact with their environmental experiences and messages to shape self-esteem.
Lishner (1997, p67) summarized the characteristics of high self-esteem and low self-esteem, which are listed in the following table:

<table>
<thead>
<tr>
<th>High self-esteem</th>
<th>Low self-esteem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display initiative, independence, curiosity, confidence</td>
<td>Do not display initiative, independence, curiosity, confidence</td>
</tr>
<tr>
<td>Show pride in their work</td>
<td>Do not show pride in their work</td>
</tr>
<tr>
<td>Trust their ideas</td>
<td>Do not trust their ideas</td>
</tr>
<tr>
<td>Set goals independently</td>
<td>Do not explore</td>
</tr>
<tr>
<td>Explore and ask questions</td>
<td>Lack confidence to initiate or approach activities</td>
</tr>
<tr>
<td>Initiate activities with confidence</td>
<td>Have difficulty reacting to change or stress</td>
</tr>
<tr>
<td>Adapt to change or stress</td>
<td>Showing immature behavior when facing stress</td>
</tr>
<tr>
<td>Handle teasing and criticism</td>
<td>Hang back or withdraw, sit apart</td>
</tr>
<tr>
<td>Tolerate frustration</td>
<td>Give up easily when frustrated</td>
</tr>
<tr>
<td>Are comfortable with transitions</td>
<td>React inappropriately to accidents</td>
</tr>
<tr>
<td>Can adjust to change</td>
<td>Describe self in negative terms</td>
</tr>
<tr>
<td>Describe self in positive terms</td>
<td>Display a depressed mood</td>
</tr>
<tr>
<td>Have a cheerful mood</td>
<td></td>
</tr>
</tbody>
</table>

Healthy self-esteem has been associated with happiness, success, and high achievement, whereas low self-esteem has been associated with depression, anxiety, and underachievement (Addeo 1994). What is uncertain, however, is whether higher self-esteem results due to success, or success results in higher self-esteem. Despite the widespread use of the term, considerable disagreement exists over the definition of self-esteem.

There are many different definitions given to self-esteem. Kahne (1996) combined them together in his article talking about the politics of self-esteem. For some, self-esteem is the conscious appreciation of our own worth and importance, the reputation we have with ourselves. For others, the need to be responsible for ourselves and to act responsibly is paramount. Some believe self-esteem judgments reflect evaluations based on “differentiating characteristics.” That means the judgments derive from social comparisons, which provide the basis for a person’s esteem. Others think self-esteem is
an entitlement of personhood and should be equated with self-respect. Kahne does not think self-esteem could become a unifying concept.

The disagreement of the definition of self-esteem arises because of the poor congruence between measurements and their supporting theories. However, there are still several self-esteem measurements that are well developed and broadly used.

*Rosenberg’s RSES* (1965) is a widely used 10-item measure of global self-esteem and has excellent reliability and validity. Specific coefficients are not given. Responses are on a 4-point scale, from strongly disagree to strongly agree.

The *Index of Self-esteem (ISE)* has been available in the Clinical measurement Package (*Hudson*, 1982, 1976) for 15 years early from 1976, but has been used for approximately 20 years. Scores below 30 indicate the absence of clinically significant problems with self-esteem. It has demonstrated good-to-excellent internal consistency, and content, concurrent, construct, and factorial validity.

Some researches use the *Culture Free Self-esteem Inventory* (*Battle*, 1981) to measure self-esteem. The general self-esteem, social/peer-related self-esteem, academic/school-related self-esteem, and parents’/home-related self-esteem subscales were used in the study. The inventory consists of 60 questions requiring Yes or No answers. And it provides adequate validity and reliability.

The *Robson self-esteem questionnaire (RSEQ)* (*Robson*, 1988, 1989) was developed to capture the full breadth of the concept of self-esteem while maintaining psychometric validity. RSEQ is a 30-item scale that purports to measure the multidimensional construct of self-esteem. Responses are on an 8-point scale: strong disagree (0) to strongly agree (7). Robson reported adequate validity and reliability. Addeo (1994) investigated the construct validity of the
RSEQ in a college population and concluded the supports for the construct validity and multidimensional interpretation of the RSEQ as a measure of self-esteem.

**Competitive and Recreational Gymnastics**

Competition is a contest between two rivals. Based on this definition one can define the competitive gymnastics program as a group of girls that practice together in order to go to competition against other competitive teams.

On the other hand recreation is defined as refreshment of strength and spirits after work; also a means of refreshment or diversion. To use this definition, a recreational gymnastics program consists of a group of children that practice together for the refreshment of spirit and do not practice for the purpose of competition.

Although there has been little research done in the area of competition versus recreational sports, competitive gymnastics has been studied as it relates to the area of body image among girls. There seems to be a trend toward smaller gymnasts in competitive gymnastics because it is more appealing to the eye, it is easier for the gymnast to perform flight skills, and smaller size is associated with speed and agility (Sample, 2000).

Furthermore, it is important that girls receive positive support in all forms of activities. When girls feel confident to perform activities, they are able to participate and excel. Being skilled as something is linked with confidence. Positive physical self-esteem relates positively to an active identity. Body attractiveness is major component of physical self-esteem (Corbin, 2002). In relation to our study, girls, regardless of their status (recreational or competitive), should have higher self-esteem than girls who do not participate in sports.
**Hypotheses**

Based on the literature, girls who participate in sports generally have a higher self-esteem than girls who do not participate in sports. However, because we wanted to determine whether level of competition affected girls’ self-esteem we considered the literature that states girls with more skills are more confident. Furthermore, those girls who are involved with competitive gymnastics must be attractive (small and agile) to compete. Given that rationale, *the girls who are competitive* are at a higher skill level and more attractive than the girls at the recreational level, and therefore *should have more self-esteem* than those girls.

The exogenous variables are age, girls in recreational gymnastics, and girls in competitive gymnastics. The endogenous variable is the level of self-esteem, which is analyzed from the data received from the questionnaire.

**Methodology**

**Population and Sample (Participants)**

The research site is Bloomington United Gymnastics School located in Bloomington, Indiana. The sample consists of two groups with approximately 30-40 girls in each group. One group is composed of girls 6-13 years old who participate in gymnastics competitively at the school. The other group is comprised of girls 6-13 years old who participate in gymnastics recreationally at the school.

Because we selected the two groups that are available at the time, the sampling method we used is a convenience sampling. The sample consists of all available girls in gymnastics.
Instrumentation (Measures)

**Endogenous variable**: level of self-esteem. Two instruments are used in this study to collect self-esteem data: (1) *Rosenberg Self-Esteem Scale—RSES* (1965): The scale contains 10 items. Responses are on a 4-point likert scale from strongly agree to strongly disagree. The self-esteem score ranges from 0 (highest self-esteem) to 6 (lowest self-esteem). Appendix A shows the items on this scale and the self-esteem calculation way. (2) *Robson Self-Esteem Questionnaire—RSEQ* (1988, 1989): The questionnaire is a 30-item scale measure. Responses range from strongly disagree (0) to strongly agree (6). The 30 items are categorized as significance (5 items); worthiness (5 items); appeal social acceptability (5 items); resilience (5 items); competence (4 items); personal destiny (4 items); value of existence (2 items). The maximum score is 210. Appendix B lists the scale and self-esteem calculation way. The Rosenberg and Robson Scales are the most popular and widely used measures of self-esteem as cited in the literature. Moreover, these measures are noted to have excellent reliability and validity. Rosenberg test-retest correlations are from .82 to .88, and Cronbach’s alpha from various samples is from .77 to .88 (Rosenberg 1965). By using both instruments, the reliability and validity of our study may increase.

**Exogenous variables** include recreational gymnastics, competitive gymnastics, and girl’s age. “Recreational” gymnastics is defined as a sport in which girls practice gymnastics regularly but do not compete against others on their team or opposing teams. “Competitive” gymnastics is defined as a sport in which girls compete against others formally for awards and standing within their divisions. The girl’s age is simply their chronological age.
Control variables: Other factors might influence level of self-esteem of these girls. We record and control the following variable that may have effect on self-esteem: family effect -- family stability (such as broken family of which girls have lower self-esteem) (Rosenberg 1965). In the questionnaires, we asked girls to answer the question ‘Whom are you living with now?’ (Mum & Dad, Mum, Dad, Others).

Procedure (Data Collection)

We collected the data at Bloomington United Gymnastics School. It is a cross-sectional survey because we were there only once to collect data. We distributed questionnaires (Appendix C) to 70 girls in the competitive gymnastics and recreational gymnastics. Only those girls who had returned a signed parental consent form (Appendix D) were allowed to complete the questionnaires.

The questionnaires (Appendix C) include the following: questions to assess level of self-esteem (RSES and RSEQ), age of girls, and family status (two-parents or single-parent family). We also gave cover letters in which to mention the importance of participation, purpose of this study, confidentiality, anonymity, and response direction.

When filling the questionnaires, many girls were confused by the RSEQ questions and did not know what to choose. Many girls even did not finish the RSEQ questions. Some of them answered all the RSEQ questions, but from the answers it was clear they did not understand the questions (such as different responses for two similar questions). Therefore, we conclude that RSEQ questions are difficult and relatively long for those young girls to answer.
Data Analysis

We used a causal-comparative design (quantitative) in this study to test if there is any difference of the levels of self-esteem between the two different groups: competitive gymnastics and recreational gymnastics. Additionally, results could indicate whether differences occur at specific ages. We used both descriptive and inferential statistical techniques to test the hypothesis.

Based on the problem girls met when filling the questionnaires, the self-esteem data we got based on RSEQ were not reliable. So the self-esteem level was decided just based on the responses of RSES questions. First, we created four variables in SPSS: self-esteem (value got using RSES calculation method in Appendix A), sports (0-recreational, 1-competitive), age, and family (0-mum and dad, 1-single parent). Then, a new categorical variable age-type was created based on age data (0- age 6 to 9, 1- age 10 to 13). Totally there are 28 data in recreational gym group and 31 data in competitive gym group. Data show that there are just two girls who are living only with their mums, one from each group. We notice that these two girls actually had very low self-esteem (one is 4, one is 5). It proved that the family stability could influence girls’ self-esteem somehow. So we decided to omit these two data to control the external effect of family stability variable, a control-procedure method mentioned by Gay (2003, p343). Therefore, our data analysis is based on the 27 girls in recreational gymnastics and the 30 girls in competitive gymnastics.

Descriptive statistics results are shown in Appendix E, including each group’s self-esteem mean, standard deviation, minimum and maximum value, histograms with normal curve (to test distribution normality), and box plots (to test observation outliers). We used factorial design – analysis of variance (ANOVA) through SPSS to determine whether the
means of two groups are significantly different from one another, and to see if the
difference just occurs at specific ages. The ANOVA results are shown in Appendix E
page 4-5. Finally, we got reliability coefficient based on our data, using Kuder-

Results and Findings

Results

From appendix E page 1, we know overall the mean self-esteem level of girls in
competitive gymnastics (1.43) is lower than the mean self-esteem level of girls in
recreational gymnastics (.89) (For RSES method, the higher the value, the lower the self-
esteeem). The two groups have close standard deviations (1.311 for recreational gym and
1.331 for competitive gym). Appendix E page 2 histogram with normal curve shows the
distribution for each group’s self-esteem. The distribution for recreational gymnastics is a
little positively skewed. The extreme values are at the higher end of the distribution. But
we could still say it is approximate a normal distribution. Relatively, the distribution for
competitive gymnastics is more close to a normal distribution. Appendix E page 3-4 box-
plot indicates that both groups have one outlier, but they are not extreme outliers which
might have serious influence on the results.

A two-factor ANOVA is used in this study to test three significance tests (appendix E
page 4): a test of different sport gymnastics, a test of girls’ age period, and a test of the
interaction of gymnastics and girls’ age. The ANOVA table displays the results of the
significance tests. Because the F-tests’ P-values of both sport gym variable and age
variable is larger than .05 confidence level (the normal critical value used in statistics),
we conclude that there is no evidence that the mean girls’ self-esteem of recreational gymnastics is different from the mean girls’ self-esteem of competitive gymnastics.

The ANOVA table also displays that the F-test P-value of the interaction term of gyms and girls’ age is .09. Though it is larger than .05, it is a small number. If we set a confidence level to be .10 (less conservative), then we could say that the interaction effect is significant. A graph to show the interaction effect is given in appendix E page 5. It shows that for girls aging 6-9 there is little self-esteem difference between two groups. However, for girls aging 10-13 competitive gym girls obviously have lower self-esteem than girls from recreational gyms.

Findings

Therefore, based on the significance tests and interaction graph, we conclude the following findings:

For younger girls (age 6-9), there is no self-esteem difference between girls of recreational and competitive gymnastics.

For older girls (age 10-13), the mean girls’ self-esteem of recreational gymnastics is higher than the mean girls’ self-esteem of competitive gymnastics.

Conclusions

The results of this investigation do not support our hypotheses. We hypothesized that the girls’ self-esteem of competitive gymnastics would be higher than girls’ self-esteem of recreational gymnastics. Actually, overall there is no difference in self-esteem between girls in competitive gymnastics vs. those girls who participate in recreational gymnastics. Especially there is no difference for the girls with age 6-9. However, the difference does exist at relatively older girls with age 10 to 13. But the result is opposite to our expected
hypothesis. For the older girls with age 10-13, the girls’ self-esteem of competitive gymnastics is lower than girls’ self-esteem of recreational gymnastics.

There could be several reasons as to why there is a shift of self-esteem levels for that certain age range. One major factor would be the amount of pressure that is created by the act of competition. As a girl ages, she also most likely moves up in levels of competition, which does create more stress, the need for longer practices, stricter coaching, etc. Within this age group for all girls, there are different choices to make with social activities. It could be that the competitive group is struggling with making choices between their social/school life and their competitive life. The girls who are in the recreational program at this age however do not have to deal with the pressures of increased skill level that goes with competition. They are increasing their skill level as they age, but this is done at their own pace. Another possible explanation for the difference in self-esteem among this age group could be the varying goals that exist for each group. The main goal for recreational gymnasts is to become better at gymnastics just because it is fun. There are no specific goals other than to do better for your own self-confidence and because it is fun to do bigger skills. On the other hand, competitive gymnasts focus on very specific goals such as achieving higher scores, moving on to the next meet, approval of coach, increases in level, etc.

Several limitations are associated with this study. First, the reliability of the test is not so high (appendix E page 6, r=.36). We use Kuder-Richardson 21 method to estimate the test reliability based on our data. But we know that personality measures do not typically report a high reliability value. Secondly, because there is lack of randomization for the convenience sample, we cannot be very sure about the equality of groups. Groups might still be different on some other important variable though we have controlled family
stability variable. Thirdly, because of the limited time and conditions, we could only get around 30 data for each group. The sample size might not be large enough for us to generalize the findings of this study to all competitive and recreational gymnastics.

To the extent our study limited, more extensive study may yield stronger effects. For instance, we could use larger sample to increase the reliability and generality of the measures. And we could consider using matching or subgroup methods to control the possible external variables. Based on the findings of this study, further research could also investigate on how the difference happens for older girls. What factors and characteristics in competitive gymnastics cause girls’ lower self-esteem, or what factors and characteristics in recreational gymnastics cause girls’ higher self-esteem. Another area for future research in regards to young girls and self-esteem would be that of their family background. Even though there were only two girls with single parent homes, their scores showed lower self-esteem. Our results indicate that there could be a correlation between family make up and self-esteem of children.

References


Sample, I.(2000). Tiny Tumblers are Stealing the Show. *New Scientist*, 176 (2255), 19


Appendix A

Rosenberg Self-Esteem Scale—RSES

“Positive” response indicate low self-esteem (indicated by *)

Scale Item I: 2 out of 3 or 3 out of 3 positively, receive a positive score for scale item I; if 1 out of 3 or 0 out of 3 positively, receive a negative score

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

I feel that I have a number of good qualities.

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

Scale Item II: 1 out of 2 or 2 out of 2 positive responses, receive a positive score

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

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

Scale Item III:
I take a positive attitude toward myself.

Scale Item IV:
On the whole, I am satisfied with myself.

Scale Item V:
I wish I could have more respect with myself.

Scale Item VI: 1 out of 2 or 2 out of 2 positively, receive one positive score

I certainly feel useless at times.

At times I think I am not good at all.
Appendix B

Robson Self-Esteem Questionnaire—RSEQ

The larger the value, the lower the self-esteem.

* Response: 0-strongly disagree, 1-disagree, 2-slightly disagree, 3-undecided, 4-slightly agree, 5-agree, 6-strongly agree. (Negative response)
* * Response: 6-strongly disagree, 5-disagree, 4-slightly disagree, 3-undecided, 2-slightly agree, 1-agree, 0-strongly agree. (Positive response)

** I am not embarrassed to let people know my opinions.
* I seem to be very unlucky.
** I am easy to like.
** If a task is difficult that just makes me all the more determined.
** There are lots of things I’d change about myself if I could.
* I can never seem to achieve anything worthwhile.
* I do not care what happens to me.
** I have control over my own life.
** Most people find me reasonably attractive.
** I am glad I am who I am.
** Most people would take advantage over me if they could.
** I am a reliable person.
* It would be boring if I talked about myself.
* When I am successful there is usually a lot of luck involved.
** I have a pleasant personality.
** I never feel down in the dumps for very long.
* I often feel humiliated.
** I can usually make my mind up and stick to it.
* Everyone else seems much more confident and contented than me.
* Even when I quite enjoy myself there doesn’t seem much purpose to it all.
* I often worry about what other people are thinking about me.
** There is a lot of truth in the saying: “What will be, will be.”
* I look awful these days.
** If I really try I can overcome most of my problems.
* It’s pretty tough to be me.
** I feel emotionally mature.
* When people criticize me I often feel helpless and second rate.
* When progress is difficult, I often find myself thinking it’s just not worth the effort.
** I can like myself even when others don’t.
** Those who know me well are fond of me.
Appendix C

**Self-esteem Questionnaire**

1. Which gymnastics are you in?
   a. Competitive gym   b. Recreational gym

2. How old are you now? ________________

3. Whom are you living with now?
   a. Mum and Dad   b. Mum   c. Dad   d. Others

4. RSES self-esteem questions: Appendix A, but it was cleaned up by keeping just questions and choices.

5. RSEQ self-esteem questions: Appendix B, but it was cleaned up by keeping just questions and choices.
INFORMED CONSENT STATEMENT

Girls’ Self-Esteem
in Competitive Gymnastics and in Recreational Gymnastics

Your child is invited to participate in a research study. The purpose of this study is to…

INFORMATION

Your child will be asked to fill out a brief questionnaire in regards to her self-esteem. Questions will address topics such as interaction with peers, achievement, self-respect, self worth, and her perception of her appearance. We will be comparing these results to the amount of time and type of involvement they have in the gymnastics program.

RISKS

There are no foreseeable risks associated with this study.

BENEFITS

The participation of your daughter in this study will help us to better understand the self-esteem of girls through a range of ages as it relates to their interaction and involvement in sports. The results of this study will also be useful to the Bloomington United Gymnastics School as they plan their future curricula for the program.

CONFIDENTIALITY

There will be no identification made of the participant other than age of child and name of gymnastics group on the questionnaires. Upon completion of the study, the data collected will be destroyed.

_________________________
Parent’s initials
CONTACT

If you have questions at any time about the study or the procedures you may contact the researcher: Amy Morwick, 812-332-8729

If you feel your child has not been treated according to the descriptions in this form, or your child’s rights as a participant in research have been violated during the course of this project, you may contact the office for the Human Subjects Committee, Bryan Hall 110, Indiana University, Bloomington, IN 47405, 812/855-3067, by e-mail at iub_hsc@indiana.edu.

PARTICIPATION

Your child’s participation in this study is voluntary; he/she may refuse to participate without penalty. If your child decides to participate, he/she may withdraw from the study at any time without penalty. If your child withdraws from the study before data collection is completed your child’s data will be destroyed.

CONSENT

I have read this form and received a copy of it. I have had all my questions answered to my satisfaction.

I agree to allow my child, ________________________________, to take part in this study.

Parent's signature_______________________________________ Date _______

Investigator's signature__________________________________ Date _______