

## INVESTIGATION OF JUMPING EXERCISES EFFECT ON SKILLS

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Original scientific paper

### Abstract

The purpose of this research was to determine the effect of jumping exercises on skills on students. Statistical society were fourth grade elementary students, on four educational areas, Shiraz, Iran. Samples were 80 students, were clustered random selected. The research was applicable, quasi experimental, in design of pre-post test. For measuring social skill, a teachers' rating of social skill questionnaire (TRSS) about students was used (Truscott, 1989). It consists of 39 items. The validity was confirmed with university professors. The Cronbach's alpha was 0.831. The reliability was measured 0.769. The TRSS items were on the Likert scale. The jumping exercised for 2 sections of 45 minutes per week, during 12 weeks. Data collection occurred after and before performing jumping exercises. There is no significant effects on social skill by jumping exercises among elementary students, was the hypothesis. Descriptive and statistical analysis like Leven test and paired sample t-tests were used. The result  $t = -2.60$  and  $df = 79$ , presented there were significant differences on social skill before and after jumping exercises ( $p < 0.05$ ). Potentially, it seems jumping exercises has the significant effect on skills. Although the hypotheses were approved, results should carefully interpret about correlations.

**Key words:** jumping exercises, skill, peer relation, sociality.

### Introduction

According to scientific researches, routine physical activities directly or indirectly have important role on prevention and cure of diseases. Sport as a social factor in controlling and curing a lot of social problems and injuries, is in height of specialist attention. On the other hand physical activities are of cheap and useful instruments in controlling stress, depression and aggression of present life (Coe et al., 2006). To get these goals, activities which are recreations and can perform in teams, obviously are effective to every one. According to the fact, routine physical activities are the basic requirements in growing ages for school students. Although, the budget and time are inadequate for physical education in schools, using simple and available kinds of activity with minimum facilities is to the point. National educational program in Iran have a total and complete look to human, considering physical and mental aspects. This program consists of 11 learning areas. Attentions to physical, mental and emotional characters of 7 to 12 years old children in elementary schools are in main purposes (Hasslet et al., 1993 & Shephard et al., 2000). In these ages, children like to play with friends, cooperate with them, enjoy playing and interested to learn social rules. Different kinds of games and various situations in sport help to make ready for future (Lee et al., 2007). Rope skipping as an active, combination of various skills, rhythmical activity can perform single or team working. Nowadays coaches and athletes apply it as a complementary activity in sports such as gymnastic, swimming, cycling, wrestling, football, basketball and volleyball. Besides, low injury potential, make it so attractive among children. Social is affected from group and social cultures a man connects to. It is believed social skill is

peoples' impression without any harm. This definition consists of expressing happiness, appreciation and other behaviors that construct inter personal relations (Hasslet et al., 1993). Specialists believed the social skill teaching program has to include all aspects of socialization (Evans et al., 2000). A study on German adolescents observed lower anxiety and depression scores, as well as less social behavioral inhibition, than their less active peers. The significant relationship between physical activity and self-image also remains after controlling for socioeconomic status (Shephard et al., 2000). Regular physical activity in adolescents is significantly related to a favorable self-image, in addition to physical and psychological well-being (Kirkcaldy et al., 2002). One recent well-controlled study has shown improvements in social skill following running activities in girls. Psychosocial and behavioral changes among girls participating in two developmentally focused youth sport programs were assessed. Girls in grades three to eight participated in 'Girls on the Run' and 'Girls on Track'. The programs resulted in beneficial increases in social skill, enhanced cooperation, and increased physical activity frequency and commitment (Dwyer et al., 2001 & Raudsep et al., 2000). In American analysis of a 55 minutes PE class revealed that only 19 minutes of this time was spent in moderate to vigorous activity and it was suggested that this was sufficient vigorous activity to impact on social skill (Debate et al., 2010). A study conducted with 214 six-grade students in Michigan found that students enrolled in PE had better social skill than students who were not enrolled in PE (Coe et al., 2012). Rajaeyan, et al. (2011) investigated 8 weeks physical activities

have effect on physical fitness and social skill of 4<sup>th</sup> and 5<sup>th</sup> grade students. 120 students were randomly selected in Tehran. AAHPERD test and Wayland questionnaire were used in pre and post test. They resulted in significant differences on social skill. Makiyany, et al. (2011) investigated rope skipping has effect on motor perceptual ability of third grade students. 60 students were clustered random selected in Dorod. There were 3 groups. Rope skipping, traditional and control groups. Lincoln Sterskey was used. They found rope skipping affects motor perceptual ability. In 2013, 287 fourth- and fifth-grade students from British Columbia were evaluated to determine if introducing daily classroom physical activity sessions would affect social skill. Students in the intervention group participated in daily 10-minutes classroom session in addition to their regularly scheduled 80-minutes PE class. Increasing in-school physical activity time by approximately 50 minutes per week, students receiving the extra physical activity time had better social skill scores than students in the control group did (Hormaty., 2010).

#### Methods

The research method was applicable, quasi experimental, in design of pre-post test. The independent and dependent variables in respective were rope skipping and skill (S).

#### Participants

Statistical society was fourth grade elementary students, on four educational areas, Shiraz, Iran. Random sample were 12 schools in 4 educational areas. A clustered random sample of 80 students in grade four with the age average of 9.5 was used from female elementary schools in Shiraz, Iran.

#### Procedure

Data collection occurred after and before performing jumping exercises. The jumping exercises was in 12 weeks, a 45 minutes section per week. Teachers completed social skill questionnaire about students. Confidentially subject's information and data was addressed.

#### Instruments

Social skill was measured using the teachers' rating of social skill questionnaire (TRSSQ). The TRSSQ consists of 39 items designed to measure social skill. Each of the TRSSQ item is a simple statement that can be answered on a Likert scale (Truscott., 1989). The validity of the TRSSQ was reported between 50-70 (Lacher et al., 1992). Professors suggested about facial and content validity based on these factors: matching with purposes, not suggesting definite answer, not being reverse item, simple, short and comprehensible item style.

The reliability of the TRSSQ was reported 0.65-0.93 (Truscott., 1989). In this research 60 students were clustered randomly selected. The TRSSQ were answered by their teachers, the Cronbach's alpha was 0.831. The Pearson correlation after 10 days on those students was 0.769.

#### Statistical analysis

Descriptive statistic was calculated. Paired sample t-test was conducted to examine if rope skipping performance has any significant effects on social skill. In all analysis  $\alpha = 0.05$ .

#### Results

The descriptive statics for students in pre and post test is presented in table 1.

Table 1. The descriptive statics for students in pre and post tests

	Frequency	Percent	Cumulative
Grade 4 in	80	33.3	66.7
Grade 4 in	80	33.3	66.7

The descriptive statics for social skill (SS) in pre and post test is presented in table 2.

Table 2. The descriptive statics for SS. in pre and post tests

	Mean	Median	Std.	Varianc
SS. in	2.727	2.692	0.392	0.154
SS. in	2.753	2.769	0.346	0.120

Null hypothesis: The distribution of social skill (SS) between students in pre and post tests is normal.

Kolmogorov-Smirnov (KS) test that is calculated for SS normality in pre and post tests is presented in table 3.

Table 3. KS. test for normal estimate of SS. pre and post tests

	Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
SS. in pre test	0.829	0.497
SS. in post test	0.468	0.981

The SS is normally distributed between students in pre and post tests.

Null hypothesis: There is no homogeneity between social skill variances in pre and post tests.

The Leven test for SS variance homogeneity is estimated in table 4.

Table 4. Leven test of SS.

	F	sig
SS	0.893	0.346

It is obvious SS variances after and before jumping exercises has homogeneity.

Null hypothesis: There are no significant effects on social skill by jumping exercises among students.

The paired sample t-test for SS is shown in table 5.

Table 5. The paired sample t-test for SS.

	t	df	sig
SS. in pre test- SS. in post test	79	-2.60	0.01

Based on  $df=79$ ,  $t= -2/60$  in  $p \leq 0.05$ , null hypothesis is rejected. There were significant differences after and before jumping exercises. In regard to table 2 it has increasing effect on SS.

### Discussion and conclusion

The researcher found jumping exercises had significant effects on skill among elementary students in grade four. For many years socialization was a key material that teachers try to cover as well as possible. Social teaching does not meet the needs of society in high schools in Iran (Yazdi., 2001). So it become obvious the duty of socialization is important goal for school teaching. The social output of PE in developing social relations is constructive in all layers of society. This was supported with the studies mentioned (Dwyer et al., 2001, Kirkcaldy et al., 2002 & Truscott., 1989). In 1999 found that spending more time in PE has effects on social skill when measured using a standardized test in elementary school. The influence of physical activity on self-esteem may be influenced by the activity mode undertaken, although positive cognitive behavioral modifications have been observed across aerobics, strength, dance and flexibility activities (Strong et al., 2005). They interoperated that improving self esteem

would increase social skill. Numerous studies have shown positive effects of physical activity on social skill (Cartledge et al., 1994, Keays et al., 1995, Pater et al., 1996, Raudsepp et al., 2000, Shephard et al., 2000, Sibley et al., 2003, Strong et al., 2005 & Tremblay et al., 2000) and sports participation (Debate et al., 2010). The 2-year follow-up of the PE program showed pupils in the experimental group did significantly better in social skill when compared to controls (Tompsonski., 2008). Studies also supported the results (Ahamed et al., 2007). It is found rope skipping affects fundamental factors of motor perceptual that would improve social skill. If it was corrective and proper training, cooperation, balance and agility will be achieved as well (Makiany et al., 2011). It is showed that 8 weeks physical activities affect on physical fitness and social skill of 4<sup>th</sup> and 5<sup>th</sup> grade students. Social skill score mean differs in pre and post tests. Physical fitness has positive effect on personal characters, self confidence, peer popularity and social skill (Rajaeyan et al., 2011). The present study found performing simple and attractive activity in PE class assists students to become socialize during physical activity and challenges. This study, although, the clustered random sampling controlled socioeconomic status but still possible influence of this factor on the observed effects of physical activity cannot be ruled out. It is possible that physical activity may be only a marker for greater levels of social skill and may not be a causal factor. It is important to note that socioeconomic status may be the major cause, acting as a mediator in relationship. This fact should be considered when interpreting the results.

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## ISTRAŽIVANJE UČINAKA VJEŽBI SKAKANJA NA VJEŠTINE

### Sažetak

Svrha ovog istraživanja bila je utvrditi učinak vježbi skakanja na vještine učenika. Statističko društvo bilo je četvrti razred osnovnih učenika, na četiri obrazovna područja, Shiraz, Iran. Uzorci su bili 80 studenata, grupirani su slučajnim odabirom. Istraživanje je bilo primjenjivo, gotovo eksperimentalno, u izradi pre-post testova. Za mjerenje društvene vještine korištena je ocjena učitelja o socijalnim vještinama (TRSS) o studentima (Truscott, 1989). Sastojala se od 39 predmeta. Valjanost je potvrđena sveučilišnim profesorima. Cronbachov alfa bio je 0.831. Pouzdanost je izmjerena 0,769. TRSS stavke bile su na Likertovoj ljestvici. Skakanje je provedeno za 2 odjeljka od 45 minuta tjedno, tijekom 12 tjedana. Prikupljanje podataka dogodilo se nakon i prije izvođenja vježbi skakanja. Nije bilo značajnih utjecaja na društvenu vještinu vježbanjem skakanja među osnovnim studentima, bila je hipoteza. Deskriptivna i statistička analiza kao što je Leven test i upareni uzorak t-testova bili su uesd. Rezultat  $t = - 2.60$  i  $df = 79$ , pokazao je značajne razlike u društvenoj vještini prije i nakon vježbi skače ( $p < 0.05$ ). Potencijalno, čini se da vježbe skakanja imaju značajan utjecaj na vještine. Iako su hipoteze odobrene, rezultati bi trebali pažljivo protumačiti o korelaciji.

**Ključne riječi:** vježbe skakanja, vještina, međusobni odnos, društvenost.

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Received: March 05, 2017

Accepted: March 20, 2017

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