

Explosive Legs Power between Tharu and Non-Tharu Madheshi Girls in the Madhesh Pradesh of Nepal: A Comparative Analysis

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Abstract

The paper deals with the objective, which was to compare and analyze the explosive legs power among the girl students of Tharu ethnic and non-Tharu Madheshi girl students in the Madhesh province of Nepal. Also, hypothesized that there is significant difference in explosive legs power between them. It was based on quantitative with comparative design. Altogether 62 girl students have designated as respondents, 31 girl respondents taken from Tharu ethnic and 31 from non-Tharu Madheshi girls. Respondents were taken through multistage sampling method. The standing broad jump test item of AAHPER youth fitness test applied as tool for this study. The standing broad jump test applied to measure the explosive legs power. While comparing the mean score of non-Tharu Madheshi girls, Tharu ethnic girls were found better in explosive legs power. Likewise, p-value of t-test has applied at 0.01 significant level. It has found significant difference between them in explosive legs power of standing broad jump test. Hence, this research paper is found the significant difference between Tharu ethnic and non-Tharu girl students. Therefore, hypothesis (H_1) is accepted. In compared on standing broad jump test the non-Tharu girls, Tharu ethnic girls have more participated in intramural-extramural sports tournaments and sporting events, as well as physical work.

Keywords: *Explosive legs power, standing broad jump, physical fitness*

Introduction

Explosive leg power is essential to each athletes. Coaches and technical staffs have been planning and applying, the various performance test. Therefore, they used to observe the fitness performance test to improve, design and evaluate for training involvements to athletics (Bennett et al., 2019; Bourdon et al., 2017). Explosive legs power is component of physical fitness. Furthermore, strength, speed, agility, balance, flexibility, local muscle endurance, cardiovascular endurance, strength endurance and co-ordination are its components. Fitness is needed to do us for best performance, healthier appearance and fresh mood (Sing, Bains, Gill, & Brar, 2012). Explosive legs power is depend upon natural and eco-friendly aspects, which is vary from person to person. This means fitness itself is a variance aspect to all individuals. Fitness indicates the capacity of physical work and efficiency in sports involvement (Johnson & Nelson,

1988). Explosive leg power source is muscles of his/her hip and legs, which generate through leg press footplate of an athlete. It is an extreme forces produced through plyometric and explosive exercise (Davis, Bull, Roscoe, & Roscoe, 2000). Power is the ability to release maximum force in a fastest possible time. It is a combination of strength and speed usually applied during a short period. Power is generates through strength and speed i.e. $\text{Power} = \text{Work}/\text{Time}$ (Sing, Bains, Gill, & Brar, 2012 as cited by Shahi, 2020, p. 2).

Fitness is that a condition to which the individual is able to function and to do her/his daily work efficiently. Fitness differs from individual to individual, which influence on individual, biological and environmental factor (Johnson & Nelson, 1988 as cited by Shahi, 2017, pp. 89 - 92). Fitness measures by pull-ups for boys, flexed arm hang for girls, sit-ups, shuttle run, standing broad jump, 50- yard dash and 600-yard run-walk test items have developed from AAHPER. These batteries of test are useful to identify the individuals' fitness (Mathews, 1978).

Physical fitness is an absence of disease, someone thinks total amount of muscular development, and few define physical fitness as ability to perform certain sport skills. However, it is a measuring the body's strength, endurance and flexibility (Uppal, Gautam, Manjul, Sing, Sharma, Kapoor, Baweja & Dar, 2005). Physical fitness is the capacity of daily activities without fatigue. It is a ability of heart and lungs and muscles (Johnson & Nelson, 1988 as cited by Shahi, 2018, pp. 609 - 613). The strength, power, speed, Agility, balance, flexibility, local muscle endurance, cardiovascular endurance, strength endurance, and co-ordination are components of physical fitness (Sing, Bains, Gill, & Brar, 2012 as cited by Shahi, 2020, p. 1). The components of physical fitness are strength, endurance, speed, flexibility and body composition however; agility, balance, co-ordination, power, reaction time and speed are under on components of motor fitness. Moreover, fitness can be measured by physical and motor fitness test (Davis, Bull, Roscoe, & Roscoe, 2000).

In some studies, Bist (2019) had conducted a study on six test items of physical fitness test of AAHPER. In standing broad jump test to measure explosive legs power, he found no significant difference between *kho kho* and basketball national players of Nepal. Rai (2017) had studied on comparison of physical fitness on seven test items of AAHPER. In explosive legs power, he found no significance difference between basketball and karate players of APF club. Sharma (2017) had studied on comparison of physical fitness on six test items of AAHPER. In explosive legs power, he found significance difference between Tharu and Chhetri boy students in Dang district. KC (2016) had studied on comparative study of physical fitness on six test items of AAHPER. In explosive legs power, he found no significance difference between Raji and Badi students in Surkhet district. Basnet (2013) had studied on comparison of physical fitness on six test items of AAHPER. In explosive legs power among six test items, he found significance difference between Sherpa and Chhetri boy students in Solukhumbu district. Gurung (2006) had studied on comparative study of physical fitness on six test items of AAHPER. In explosive legs power among six test items, he found significance difference between Indigenous and non-Indigenous boy students in Gorkha district. Thapa (2010) had studied on comparison study of physical fitness on six test items of AAHPER. In explosive legs power among six test items, he found significance difference between Dalit and non- Dalit boy students in Bajhang district.

Sharma (2015) had studied of physical fitness on six test items of AAHPER. In explosive legs power among six test items, he found insignificance difference between institutional and community girl students in Dhanusha district. Thapa (2011) studied on comparison of explosive power in Dhankuta multiple campus. In vertical jump for explosive legs power, he found significance difference between HPE and non-HPE groups, HPE and non-HPE boy groups, as well as HPE and non-HPE girl groups. Bohara (2009) had studied on comparison of physical fitness on six test items of AAHPER. In explosive legs power among six test items, there had found significance difference between Tharu and Madheshi boy students in Bardiya district.

Above reviews concluded that the explosive legs power is that a capacity of an individual to apply maximum muscular force to his/her explosive pace of movements of legs or lower body. Moreover, physical fitness can be measured in various parameters e.g. balance, endurance, explosive legs power, agility, speed, heart rate, oxygen uptake, flexibility etc. Furthermore, the explosive legs power is an essential component of physical fitness of an individual. Therefore, this research paper is associated to the explosive legs power.

The research paper has enclosed the Madheshi girl students. The respondents were from Tharu ethnic and non-Tharu Madheshi girls including of Shah, Kalwar, Yadav, Jha, Paswan, Muslim, Mishra and Pandit communities. The paper has conducted among practical examinee students in bachelor first year of physical education subject. The respondents' students were taken from JS Murarka Campus, Lahan of Siraha district and Thakur Ram Multiple Campus Birjunj of Parsa district, Nepal. Tharu is an ethnic people of Madhesh province, Nepal. In Tharu community, girls have moderate opportunity to participate in sports. Tharu culture is more traditional but impartiality for their women. Bohara (2009) concluded that there is no discrimination for men and women in Tharu community. In comparison of non-Tharu of Madheshi communities, the Tharu community is generally involved in agricultural works and loader activities. They are physically strong and famous in sports in Nepal. The non-Tharu Madheshi girls do not have leisure time. In comparison of non-Tharu girls of Madheshi communities, the Tharu ethnic girls have no social barriers for women and get more chance to involve in sporting and physical activities on their leisure time. Whether they were self-motivated, family support and other factors to participate in sports. It was a big issue and quarry. Whether, the Tharu students have more opportunity in sports or not, this is second quarry. In comparison, whether the girl students of Tharu community have more involved in physical work and physical activities or not. These are issues of this paper. Among Madheshi communities, this kind of comparative research paper in explosive legs power has not conducted so far. Additionally, it has not received the research discussion yet on to what difference of explosive legs power between Tharu and non-Tharu girl students. These major issues are involved in this title and objective, as well as hypothesis. Thus, title of this research paper was stated as Explosive Legs Power between Tharu and Non-Tharu Madheshi Girl in the Madhesh Province of Nepal: A Comparative Analysis.

Objective

The main objective of this paper was to compare and analyze the explosive leg power between Tharu ethnic and non-Tharu Madheshi girl students in the Madhesh province of Nepal.

Hypotheses

The hypothesis is formulated for this paper, which is described below (Neure, 2018):

Hypothesis (H₁): There was significant difference in agility between Tharu and non-Tharu Madheshi girl students.

Methodology and Tool

Methodology: The paper was based on quantitative with comparative design (Khanal, 2017). It was associated to the comparative analysis between Tharu ethnic and non-Tharu Madheshi girl students of Terai area. Madhesh province was respondents' area of this research paper, which is belongs to the province 2 of Nepal. The respondents' students were taken from JS Murarka Campus, Lahan of Siraha district and Thakur Ram Multiple Campus Birjunj of Parsa district, Nepal. Whereas non-Tharu Madheshi girls were from Shah, Kalwar, Yadav, Jha, Paswan, Muslim, Mishra and Pandit communities. Baskota (2009) has described about the sampling method, so the sampling method was multistage sampling methods. The paper has conducted among practical examinee students in bachelor first year of physical education subject. Thus, respondent's campuses were taken as convenient sampling method. Furthermore, these both respondents groups was taken from simple random sampling method.

For respondents of Tharu girls, 31 girl students designed as sample whereas 11 of 30 Tharu girl from Thakur Ram Multiple Campus and 20 of 45 from JS Murarka Campus were selected through simple random sampling method. Likewise, the respondents of non-Tharu Madheshi girls, 31 girl students designed as sample whereas 22 of 54 Tharu girl from Thakur Ram Multiple Campus and 9 of 15 from JS Murarka Campus were selected through simple random sampling method. Altogether, there were 62 girl students as sample of respondents. **Tool:** The readymade test item of AAHPER youth fitness test has applied as the research tool. The standing broad jump test has conducted for measuring the explosive legs power of respondents groups (Mathews, 1978).

Result and Discussion

The heading of this paper deals with the result and discussion of the statistical data gathered on standing broad jump between Tharu and non-Tharu girl students from JS Murarka Campus and Thakur Ram Multiple Campus (Baskota, 2009). The standing broad jump test has administered to the respondents girls. These obtained raw scores were converted in various statistical cases e.g. mean, standard deviation, standard error, maximum, minimum, range, coefficient of variation, coefficient of variation (%), p-value of t-test and conclusion (Shahi, 2018). The result of these test items is discussed in following topic:

Standing Broad Jump Test

Johnson & Nelson (1988) explained that standing broad Jump is action of forward jumping for maximum distance in standing position. Its objective is to measure the explosive legs power. The reliability and objectivity of standing broad jump test were 0.963 and 0.96 respectively, as well as face validity is accepted. Either a mat or floor may be used for this test. Furthermore, chalk and measuring tape are needed for materials. Mathews (1978) described that subjects will

Shrestha (2012) has conducted a study of physical fitness between public and private girl students in Dhading district. He found not significant difference in explosive legs power between them. Acharya (2009) has also conducted a comparison study of physical fitness between Arghakhanchi and Kapilvastu boy students. There were found no significant different different between these groups. Shahi (2015) has conducted a study on comparison of general physical fitness between Saptagandaki and Nav Kshitiz campus girl students in Chitwan and Mahottari district respectively. In comparison of mean score of Nav Kshitiz girls (1.42), the Saptagandaki girls (1.64) were better in explosive legs power. Moreover, he has found significant different different between these groups. Furthermore, Shahi (2020) has conducted a study on physical fitness between Sarlahi and Gaurishankar Yadav Rautahat campus girl students in Sarlahi and Rautahat district respectively. He explained that the mean value of Sarlahi and Gaurishankar Yadav Rautahat campus girls were 1.39 and 1.30 meter respectively. In comparison raw scores of Gaurishankar Yadav Rautahat campus, the Sarlahi girls were few better in explosive legs power. However, he has found no significant different different between them.

Verification of Hypothesis (H_1):

The formulated hypothesis (H_1) is related to the above table. Whether the significant difference in explosive legs power was occurring or not? Above table shows that the p -value of t- test ($p = 0.0000$) is found significance at 0.01 level of significance at 99 percent confidence interval i.e. $p = 0.0000 < \alpha = 0.01$. This result proved that it is sufficient evidence so there is significant difference between the mean score of Tharu and non-Tharu in Terai counterparts. Therefore, there is difference in explosive legs power between Tharu and non-Tharu girl students. So this result has proved that above hypothesis (H_1) is accepted. By the above discussion and statistical result, it is concluded that there was found significant difference in explosive legs power between groups of Tharu and non-Tharu girl students. Hence, in comparison of non-Tharu girls, the Tharu girls were more involved in athletic activities and sporting activities, as well as physical work.

Conclusion

Standing broad jump is among the AAHPER fitness test items. The standing broad jump test is intended to measure explosive legs power, which is a component of physical fitness. The objective of this paper was to compare the explosive leg power between groups of girls in Tharu ethnic and non-Tharu of Terai area of Nepal. In addition, it was hypothesized that there is significant difference in explosive legs power between them. While comparing the mean score of non-Tharu girls, the Tharu ethnic girls were found better in explosive legs power. Likewise, p -value of t-test has applied at 0.01 significant level; it has found significant difference between them in explosive legs power of standing broad jump test. Therefore, hypothesis (H_1) of this paper is accepted. This means Tharu ethnic girls were more involved in athletic activities and sporting activities, as well as physical work in reference to the standing broad jump test.

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