Contrast of Physical Fitness between Rai and Limbu Ethnic Communities of Phalelung Rural Municipality: A Comparative Analysis

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Abstract

This paper reports the findings of the study which attempted to compare and analyze the contrast of physical fitness between Rai and Limbu ethnic boy students of Phalelung-2 Rural Municipality, Panchthar. Drawing upon the quantitative approach, the study was based on comparative and descriptive research design. Altogether 24 boy students were selected as the sampled population using purposive non-random sampling procedure. Among them, 12 were from Rai and 12 from Limbu communities. The physical fitness test battery developed by American Association for Health, Physical Education and Recreation (AAHPER) was applied with the minor adaptation as the tool for data collection. While comparing the mean score, the boys from Rai community were found better than their counterpart group in pull-ups, shuttle-run and sit-ups. Likewise, the Limbu students were found to better than their counterpart group in standing broad jump, 50-yard dash and 600-yard run/walk. The sit-ups test has showed significant difference among six test items between two counterpart groups. It was also found that there is no significant difference in physical fitness between two counterpart groups. Whereas equating the composite score between both groups, it found no significant difference between both ethnic groups. It implies that both the ethnic groups should be treated with similar types of physical and sporting activities.

Keywords: Physical fitness, AAHPER youth fitness test, fitness, ethnic

Introduction

Physical Fitness is the ability to perform daily task vigorously and alertly with energy. It is an essential qualification for all students to demonstrate the better performance in sports (Singh et al., 2012). So, it is important to perform the works and personality building as well as to flourish the potentialities and it is taken as sports. It is the subject of interest for all who are concerned to sports. Moreover, physical fitness refers to the ability in-person to live a full and balanced existence. Being physically fit means having one's heart, blood vessels and lungs and muscles functioning at peak efficiency (Jha, 2004 as citied in KC, 2016). He further states that peak or optimum efficiency means the high level of health condition which we need for taking part in daily task, sports and recreation of enthusiasm and pleasure.

Physical education is that phase of the whole process of education which is concerned with vigorous muscular activities and related responses and with the modification in the individual resultant from those response (Nixon & cozen, 2003 as cited in Bhatt, 2016). Physical training is a planned and controlled process in which for achieving a goal, challenge in complex sports motor performance, ability to act and behavior are made thought measures of content, methods and organization (Martin, 1979 as cited in Baruwal,2067). What does it mean to be physically fit? Physical fitness is defined as "A set of attributes of people or achieve that relates to the ability to perform physical Activities" (USDHHS, 1996). Physical fitness includes the elements of strength muscular endurance cardio –respiratory endurance and flexibility. Recently more and more physical educators are adding weight control or freedom from obesity as component of physical fitness (Johnson & Nelson 1988, p. 74). According to them the impetus for this no doubt came from medical profession. There are many medical problems associated with obesity call the cooperative efforts between the medical fields and physical education although causes of obesity is lack of physical activity. It is major behavior characteristics held in common by a large presenting obese person shown to be

an effective means for reducing fat and maintaining sufficient muscle mass. Physical fitness has sometime defined in term of the capacity to do work. In this context, obesity is definitely a negative factor and the avoidance of obesity qualifies as viable components of health-related physical fitness.

Physical education is an integral part of the total education process and has its aim to develop physically mentally, emotionally and socially fit citizens through the medium of physical activities (Sharma, 2014 as cited in KC, 2016). Physical fitness is the ability to demonstrate vigorous physical action. It includes endurance, power, strength, speed and ability. A person who physically fit has the ability to combine those traits into smooth effective action both at; work and play (Carlson, 1971 as citied in KC, 2016). He concluded that fitness is the capacity to the individual to live and function effective, purposeful and zestfully and to meet confidently the problem and crisis which are among live expectation.

Physical fitness is the most important factor in the field of physical activity which is helpful to develop capacity, to perform different fitness ability, to develop human body is to function with vigor and with simple energy to engage in leisure activities. (Bucher, 1992) according to him physical stress muscular strength and endurance cardio-respiratory integrity and general alertness are the overt sign of physical fitness. A physical fitness is one of the most important parts of human life only with this quality man can adopt changing environment. This quality of physical fitness has recognized many years ago. Gradually and steadily the human beings tried to acquire the qualities of physical fitness came into existence which has known as an essential part of physical fitness and some time it is used as similar to physical fitness.

American Association for Health, Physical Education and Recreation (AAHPER) is a renowned organization working for health and physical education. This organization invented test battery/tool in 1957 to measure the Physical Fitness of the youths of 5-12 grade students (Mathews, 1978). Moreover, he explained the tool had revised many times

and the latest revision was made in 1975. The researcher used the latest version (tested and trusted version) to measure the physical fitness, which consisted six items. Sit up for abdominal muscle strength, pull ups for arms strength, broad jump for leg power, 50m dash for speed and 600m run for cardiovascular endurance (Sherchan, 2077). Physical fitness is to the human body what fine turning is to an engine. It enables us to perform up to our potential. Fitness defined as a condition that helps us look, feel and do our best (Sing, 2012 as cited in Sharma, 2017). According to Singh the ability to perform daily takes vigorously and alertly, with energy left over for enjoying leisure time activities and meeting emergency demands. It is the ability to endure, to bear up, to withstand stress, to carry on in circumstances where an unfit person cannot continue, and is a major basis for good health and well-being.

Rais and Limbus is oldest ethnic people of Nepal. According to the ancient history of Nepal, it considered that both communities have best energetic fitness among Nepalese people. Gorkhas' army has been keeping famous record in the world (HAL, 2016). Furthermore, in combatant aspect, both ethnics have been keeping famous still now among Gorkha army. The terms physical fitness and armed personals are interrelated to each other. Since, the above literature we conclude that this research paper of physical fitness between those ethnics' communities has not published yet. So, this paper focused on the contrast of physical fitness between male students of Rai and Limbu communities. Therefore, this paper will basically compare and contrast the physical fitness between the boy-students of Rai and Limbu ethnic groups residing in Phalelung Rural Municipality, Panchthar.

Methodology

This paper based on comparative and descriptive research design. This paper is based on quantitative data which used to find out the exiting situation of Rai and Limbu national team in Nepal. The study attempted to test a null hypothesis that there is no significant difference in the physical fitness between two counterpart groups. The main

sources of data for this study were boy students of Limbu and Rai ethnic groups. The primary data were taken from boy students of Rai and Limbu teams of Nepal sports council. It applied purposively sampling procedures to select the sample population. Altogether, there were 24 respondents including 12 from each community who had participated in national game. Standard the Physical fitness test battery as developed by (AAHPER) in used in this study. The test battery includes following events e.g., Pull-up, Sit-ups, Standing Broad Jump, 50 Yards Dash, Shuttle Run and 600-yard Run Walk. Then, the collected data were collated, tabulated and analyzed and interpreted statistically.

Result and Discussion

In this chapter, all the information collected from the field. There were tabulated, analyzed and interpreted as per the objective of the study. There were collected the data from the field by using six test items of AAHPER youth physical fitness test battery. The data were converted into t-value than compared on the physical fitness of Rai and Limbu boy students. By using t-test, the researcher had tried to find the significant differences between the physical fitness of selected groups of students in this chapter.

Item Wise Comparison of Physical Fitness of Rai and Limbu Boy Students

This paper applied all the six test items recommended in AAHPER youth physical fitness test. By using the collected data, the research paper compared the physical fitness of the National Rai and Limbu Students. The item wise comparison is given below:

Comparison on Pull-Ups

By treating the Pull-Ups scores of Rai and Limbu students, the paper found the results as following:

Table 1

Comparison of pull-ups between Rai and Limbu Students

Statistical Measures	**Rai**	**Limbu**
Mean	15.91	14.58
Standard Deviation	4.75	3.09
Coefficient variation	29.85	21.19
Calculated T– value	.780	
Tabulated t-value at 0.5 level	2.06	
Conclusion	No significant	

The above table No. 1 shows that the mean of Rai students was 15.91 and the mean score of Limbu students was 14.58 in Pull-Ups i. e., in average each Rai player did 15.91 times Pull-Ups whereas each Limbu Player did it for 14.58 times which showed that Rai students arm strength was better as compared to Limbu Students. The statistically T-test was applied in this paper to see the significant difference between the mean of Rai and Limbu Students. The calculated T value was 780 whereas tabulated T value is 2.06 at 0.05 significance level. The calculated t value was less than tabulated value 0.05 significance level. Therefore, there is no significant relation between the variables.

The above data show that the mean of Rai students was 15.91 and the mean score of Limbu students was 14. 58 in Pull-Ups i. e., Rai students have better arms strength than the Limbu player on the test. The reasons behind had no significant different S. D. and T value of students of both teams involved daily in hard work, pulling and pushing the object, and sports activities in the study area or National team.

Comparison of Shuttle Runs

By administrating test of Shuttle Run on Rai and Limbu boy students, this paper found the result as following:

Table 2

Comparison of Shuttle Runs between Rai and Limbu Students

Statistical Measures	**Rai**	**Limbu**
Mean	5.02	7.55
Standard Deviation	0.0082	0.83
Coefficient variation	1.63	10.97
Calculated T– value	-10.00	
Tabulated T-value at 0.5 level	2.06	
Conclusion	Not significant	

The above table table no. 2 shows that the mean score of Rai students 5. 02 second and the mean score of Limbu students 7. 55 second on Shuttle Run test which means that Limbu Students were more agile than Rai Students. But the difference in mean score only could not show the difference between agility of Rai and Limbu students. So, this paper applied t- test to see the significant difference between the means of Rai and Limbu Students. The calculated t value was -10. 00 and the tabulated t value was 2. 06 at 0. 5 level of significance. Calculated T-value is greater than the tabulated T- value at 0. 05 level of significance. So, that this paper concluded that there was no significant difference between the means of two teams i. e., Rai student agility was better than Limb students.

The above data shows that the mean score of Rai students 5.02 second and the mean score of Limbu students 7.55 second on Shuttle Run Test which means that Rai Students are more agile and faster than Limbu Students which may be the cause of game practice.

Comparison of Sit-Ups

The data collected on Knee bent Sit Ups of Rai and Limbu boy students on the following table:

Table 3

Comparison of Sit-Ups between Rai and Limbu Students

Statistical Measures	**Rai**	**Limbu**
Mean	26.75	19.66
Standard Deviation	5.27	3.51
Coefficient variation	19.70	17.84
Calculated t–value	3.703	
Tabulated t-value at 0.5 level	2.06	
Conclusion	Significant	

The above table shows that mean score of Rai students is 26.75 and mean score of Limbu students is 19.66 in Sit Ups Test. The mean score of Rai students is higher than Limbu Students. The researcher used t - test to see the significant difference between the means of two groups. Calculated t value was 3.70 and tabulated t value is 2.06 at 0.05 significance level. The calculated t value is greater than tabulated t value at 0.05 of significance. So, it was found that there is significant different between the means of two teams. The research paper concluded that Rai students showed Sit Ups performance better than Limbu students did because Rai students have better abdominal strength. The difference in performance is seen as Rai students are more laborious which enhances their abdominal muscles' strength as compared to Limbu students.

The above result shows 26.75 mean score of Rai students and 19.66 mean score of Limbu students in Sit Ups test. This means, Limbu students have better strength in abdominal muscle than Rai Students.

Comparison of Standing Broad Jump

The score of Rai and Limbu Boy students on Standing Broad Jump are presented on the following table:

Table 4

Comparison of Standing Broad Jump between Rai and Limbu Students

Statistical Measures	**Rai**	**Limbu**
Mean	2.32	2.35
Standard Deviation	0.12	0.09
Coefficient variation	5.16	3.82
Calculated T – value	-643	
Tabulated Z-value at 0.5 level	2.06	
Conclusion	Not Significant	

The above table shows that the mean score of standing Broad Jump of Rai and Limbu students is 2.32 meter and 2.35 meter respectively. The mean scores show that each Limbu students jumped longer distance than Rai students. So, the research paper applied the t-test to find the significant difference between the means. The difference in means scores only does not show the significant difference between the means of two groups. Calculated T value was -643and tabulated t value is 2.06 at .05 significance level. The calculated t value was smaller than tabulated t value at .05 not significance level so no significant difference was found. Thus, Limbu students' leg muscle power was found slightly better than Rai Students.

The above data shows 2.32 m. mean score of Rai students and 2.35m. mean score Limbu students in Standing Broad Jump Test; it means Limbu students have slightly better explosive power than Rai students, because of jumping practice of Limbu in game and training.

Comparison of Fifty-Yard Dash

The test 50 Yard Dash was used to test the speed level of respondents, by administering test of 50 Yard Dash among Rai and Limbu students, the research paper found the result as following:

Table 5

Comparison of Fifty-Yard Dash between Rai and Limbu Students

Statistical Measures	**Rai**	**Limbu**
Mean	7.95	7.55
Standard Deviation	1.82	1.65
Coefficient variation	22.86	21.85
Calculated T – value	.549	
Tabulated T-value at 0.5 level	2.06	
Conclusion	Not Significant	

Table 5 shows that mean score of Rai students is 7.95second and the mean score of Limbu students is 7.55 second on 50-yard dash which shows that Limbu students ran faster than Rai students did. So, the research paper applied t-test to find significant different between means of Rai and Limbu students. Calculated t value was .549 so the significant difference was determined because the tabulated t value 2.06 is less than calculated value at .05significance level. Thus, not significant difference was found between the speed of Rai and Limbu students. It depends on nature of game because the respondent students are involved in different nature of physical activities which helped to improve speed.

The above data shows high mean score of Limbu students better than Rai students in 50-yard dash it means the Limbu students are better in speed than Rai students because the score of the students was taken in time.

Comparison of 600 Yards Run /Walks

The data collected by the researcher by taking test of 600 Yard Run on Rai and Limbu National payers is presented in the table below:

Table 6

Comparison of 600 Yards Run /Walk between Rai and Limbu Students

Statistical Measures	Rai	Limbu
Mean	1.27	1.26
Standard Deviation	0.26	0.31
Coefficient variation	20.45	7.14
Calculated Z – value	.175	
Tabulated z-value at 0.5 level	2.06	
Conclusion	Not significant	

From the results of the above table, we had seen that, the mean score of Rai students 1.27 minutes and the mean score of Limbu students is 1.26 minute in 600-yard run test. The mean score of Limbu students is slightly better than Rai students which mean that Limbu students have better endurance than Rai students do. So, the research paper applied t-test to see the significant difference between the means of Rai and Limbu Students. The calculated t value was .175 found higher than tabulated t value 2.06 at .05 significance level. Here, the calculated t value was found higher than tabulated t value. So, it concluded that there is significance difference between the means of Rai and Limbu students.

The above data shows better performance in Limbu students than Rai students in study area because the Rai students mean score was 1.27 minute and Limbu students' mean score was 1.26 minutes in completing 600 yards Run. The reasons behind Rai and Limbu player in the score of SD, Mean, were engagement of students of both groups in different fitness club, walking, and sports activities in the study area but there is no significant difference in T value between both groups

Comparison on Composite Scores

The data calculated by the researcher on composite score on Rai and Limbu students is presented in the table below:

Table 7

Comparison on Composite Scores

Statistical Measures	**Rai**	**Limbu**
Mean	59.91	52.96
Standard Deviation	12.22	9.26
Calculated T – value	-647	
Tabulated T-value at 0. 5 level	2.06	
Conclusion	No Significant	

The above table shows that the mean score of Rai students is 59.91 and the mean score of Limbu students 52.96 on composite score. The mean score of Rai student is better than Limbu students. However, by seeing means of two groups, comparison is incomplete. So, the research paper applied T- test to see the significant difference between the mean score of Rai and Limbu player. The calculated T-value is -647and tabulated T -value 2.06 at .05 level of significance level. Here the calculated T- value found less than tabulated T-value at .05 level of significance. So, this research paper concluded that there is no significant difference between the mean of Rai and Limbu students' groups in the study area.

Testing of hypothesis

In this research paper, it conducted six test items of AAHPER fitness test to measure the fitness level of respondent groups. The raw data of all test items converted into different statistical cases than compared between two groups. While comparing the mean score, the Rai students has seen better to his counterpart group in pull-ups, shuttle-run and sit-ups. Likewise, the Limbu students has seen better to his counterpart group in standing broad jump, 50-yard dash and 600-yard run/walk. From the above finding, the sit-ups test has showed significant difference among six test items between two counterpart groups. Moreover, the research paper hypothesized that there is no significance difference in physical fitness between two counterpart groups. Therefore, it

has established the composite score through summation of above six test items of fitness test. While calculated the composite score in different statistical cases, there has found no significant difference between both counterparts. Hence, the hypothesis of this research paper is accepted.

Conclusion

Physical fitness involves the performance of the heart, lungs and muscles of the body. And, since what we do with our bodies also affects what we can do with our mind, fitness influences to some degree to qualities such as mental alertness and emotional stability. In previous year, fitness commonly defined as the capacity to carry out the day-to-day activities without undue fatigue. However, as automation increased leisure time. Change in life styles following the industrial revolution rendered this definition insufficient. These days, physically fitness is considered as a measure of the body to be healthy, to resist hypo-kinetic disease, and to meet emergency situation. These test items measured the strength of arms and abdominal muscles, speed, agility, power of legs and cardio-respiratory endurance etc. The readymade test items of AAHPER fitness test have applied to measure the fitness level of respondent groups. The pull-ups, sit ups, shuttle run, standing broad jump, 50-yard dash and 600-yard run included to measure the physical fitness of Rai and Limbu Boy students. The raw data of all test items converted into different statistical cases than compared between two groups. While comparing the mean score, the Rai students has seen better to his counterpart group in pull-ups, shuttle-run and sit-ups. Likewise, the Limbu students has seen better to his counterpart group in standing broad jump, 50-yard dash and 600-yard run/walk. From the above finding, the sit-ups test has showed significant difference among six test items between two counterpart groups. Moreover, the research paper hypothesized that there is no significance difference in physical fitness between two counterpart groups. Therefore, it has established the composite score through summation from scores of six test items of fitness test. While calculated the composite score in different statistical cases, there has

found no significant difference between Rai and Limbu Boy students. Hence, it concluded that the research paper has found equal fitness level in both counterparts. This means, this paper concluded that both ethnics' groups have involved in similar types physical and sporting activities.

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