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Development of Fireman's Carry Freestyle Wrestling Skill Test for Junior-Level Male Wrestlers

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Abstract

In the field of wrestling, there are limited skill tests available to evaluate the performance of wrestlers effectively. Therefore, the researcher undertook the study titled "Development of Fireman's Carry Freestyle Wrestling Skill Test for Junior-Level Male Wrestlers." The primary objective of this study was to develop a standardized freestyle wrestling skill test specifically designed for the selection, evaluation, and assessment of junior-level male wrestlers. This normative study was conducted under a descriptive research framework and focused on male wrestlers aged 18 to 19 from schools across Punjab. A purposive random sampling method was employed to select the participants. The research adhered to standard procedures and followed a stepwise approach for constructing the skill test, while also establishing standard norms. To ensure accuracy, the researcher collaborated with various wrestling experts to analyze the key skills commonly used by school-level wrestlers in the 18-19-year age group. The newly developed skill test was administered to male wrestlers from various schools, wrestling clubs, and training centers across Punjab. Based on the results, the test was revised and finalized after a pilot study. The validity, reliability, and objectivity of the test were established through standard protocols detailed in numerous reference books on testing, measurement, and evaluation. The data collected from administering the test were statistically processed to develop normative scales for test items. Two main scales were used to establish norms: the Percentile Scale and the 7 Sigma Scale. These scales were applied to both state and national-level male wrestlers. Scores were classified into five performance categories: Excellent, Good, Average, Fair, and Poor, following a normal distribution curve. The lowest scores of the t-scale, hull scale, and sigma scale for the Fireman's carry skill were found to be 10.78, 11.76, and 12.08, respectively. Meanwhile, the highest scores recorded for these scales were 17.28, 16.30, and 15.98, respectively. Similarly, the lowest and highest standard scores for the Fireman's carry skill were classified into poor and excellent categories based on the developed norms. The 5th and 95th percentile scores for all freestyle wrestling skills were determined to be 13.33 and 14.33, respectively. The results of the normative analysis show the following score ranges for wrestlers: Excellent (14.69-15.33), Very Good (14.03-14.68), Good (13.38-14.02), Fair (12.73-13.37), and Poor (4.00-12.72). Out of the total sample, 23 wrestlers (11.5%) fell within the Excellent category, 60 wrestlers (30%) were classified as Very Good, 64 wrestlers (32%) were in a good category, 38 wrestlers (19%) were categorized as Fair, and 7 wrestlers (3.5%) fell into the Poor category.

Keywords: Wrestling, Skill Test, Standardization, Norms, Evaluation, Performance

Introduction

Freestyle wrestling is a combat sport. The dynamic movements and their proper execution in playing situations are entirely scientific, and biomechanical principles are fully employed in Wrestling. Wrestling requires a high degree of skill development, physical fitness, and motor abilities for outstanding performance. The frequent change and advancement in wrestling games are mainly due to the overemphasis given by sports experts on systematic training and accurate application of scientific knowledge. A skill test may serve as a useful tool for the selection of real wrestlers for a team representing their institutions, district, or state association on an objective basis, minimizing bias on the part of selection committee members. Provide feedback with motivation to the wrestlers from time to time on the degree of progress they make in their abilities. This instrument may also be used in grading wrestlers in advance, teaching or coaching of freestyle wrestling, or in coaching sessions arranged for competition at various levels. This study will help physical education teachers and coaches in judging the adequacy of achievements of their students in wrestling skills and will assist the wrestlers in diagnosing their strengths and weaknesses in wrestling. The test will be the latest test that fulfills the present requirement of freestyle wrestling.

Review of literature

The purpose of this research is to design a comprehensive and practical framework for identifying and developing talent in field hockey at the grassroots and university levels in India. With the increasing competitiveness in international sports, structured talent identification models are crucial for nurturing athletes from an early stage. This study explores the key physiological, psychological, technical, and tactical parameters that can be used to recognize promising players early in their careers. (Kaur, N. & Kumar, S. 2025).

The physiological impact of structured physical education programs on athletic performance and well-being has also been demonstrated to significantly enhance rehabilitation outcomes. These structured programs not only improve athletic performance but also support the holistic recovery of young athletes, emphasizing the interconnectedness of physical conditioning and injury prevention (Kaur, Kumar, & Kaur, 2025).

In the field of wrestling, there are limited skill tests available to evaluate the performance of wrestlers effectively. Therefore, the researcher undertook the study titled "Development of Double-Leg Takedown Freestyle Wrestling Skill Test for Junior-Level Male Wrestlers." The primary objective of this study was to develop a standardized freestyle wrestling skill test specifically designed for the selection, evaluation, and assessment of junior-level male wrestlers. This normative study was conducted under a descriptive research framework and focused on male wrestlers aged 18 to 19 years from schools across Punjab. (Kumar, S., Kaur, H., & Kaur, N., 2024).

In the field of wrestling, only a few skill tests were available to evaluate the skill performance of wrestlers. So researcher has undertaken the study "Development of single-leg takedown free style wrestling skill test for junior level male wrestlers". The purpose of the study was to develop of freestyle wrestling skill test for selection, evaluation, and assessment of the performance of wrestlers. The normative study was conducted under descriptive research. The study was confined to the age group of 18- to 19-year-old school-level male wrestlers from Punjab. (Kumar, S., Kaur, H., & Kaur, N., 2023).

Kaushik, S. (2022) conducted the construction and standardization of tests for Strength and Endurance in cricket. Prabhakar, S. (2019) conducted the construction of a fielding ability test in softball for Junior boys.

In the field of wrestling, only a few skill tests were available to evaluate the skill performance of wrestlers. So researcher has undertaken the study "Development of free style wrestling for junior boys". The purpose of

the study was to develop of free-style wrestling skill test for selection, evaluation, and assessment of the performance of wrestlers. The normative study was conducted under descriptive research. The study was confined to the age group 18 to 19 years, school-level male freestyle wrestlers from Punjab. (Kaur, H. & Kumar, S. 2017).

Kumar, S., Kaur, M. N. (2025). The integration of Sustainable Development Goals in educational systems is a key issue for a sustainable future. India's National Education Policy (NEP) 2020 presents a transformative approach to education that focuses on educational practices aligned with a global sustainability agenda. This paper critically examines the role of NEP 2020 in furthering SDGs through its impact on educational policy, governance, and pedagogical innovation. The research focuses on three main dimensions: (1) Policy reforms that support inclusivity, equity, and lifelong learning; (2) Governance frameworks that foster decentralization, community engagement, and collaborative leadership; and (3) Pedagogical innovations, such as technology integration and competency-based education, to make the learning experience more meaningful and foster sustainable development.

Kumar P. (2016) studied the construction and standardization of taekwondo skill tests. Khodadad, K. et.al. (2015) explored the construction and validation of a trial/tool for wrestling abilities. David, E. (2012) conducted a study which was to describe the technical-tactical performance of the top ten wrestlers in the 2011 World Senior Championship in freestyle and female wrestling from the time of 2013 Bahman. M, Sholeh, K. K., and Farshad, T. 2014, Mane H. Dnyaneshwar 2014, Metz. K et.al (1997) Development of a wrestling-specific performance test. It was observed through wrestling literature that only Mane H. Dnyaneshwar constructed a wrestling skill test, according to a researcher. In the field of wrestling, only a few skill tests were available to evaluate the skill performance of wrestling players. So, the researchers undertook the study "Development of skill of freestyle wrestling skill test for junior level male wrestlers". The objective of the study was to construct and standardize "Test for the selection, evaluation, and assessment of the performance of wrestlers. The normative study was conducted under descriptive research. The study was confined to 55kg weight category junior-level male freestyle wrestling players from Punjab.

Kaur, M. N., Kumar, S., & Partap, Y. (2025). Sports injuries are common occurrences among athletes across all levels of performance, from amateurs to professionals. Effective rehabilitation plays a crucial role in ensuring safe and optimal return-to-play while minimizing the risk of re-injury. This review paper presents a comprehensive overview of rehabilitation strategies used in managing sports injuries, emphasizing a multidisciplinary approach. The study aims to identify and evaluate the most effective rehabilitation practices, including physical therapy, psychological support, nutrition, and technological interventions.

(Kaur, M. N., Kumar, S., & Singh, S, 2025). This review paper aims to explore modern, effective, and science-backed strategies used in the identification and development of cricket talent. With the evolving demands of the game, traditional scouting methods are no longer sufficient. This study aims to analyze how innovative technologies, psychological profiling, and performance analytics are reshaping the talent pipeline in cricket. The review was conducted by examining studies, reports, and data from international and national cricket academies, including the National Cricket Academy (India), ECB Pathway Program (England), and Cricket Australia's Talent ID framework.

Kumar, M. S., Dhaliwal, A. K., & Kaur, M. M. (2022). The purpose of the study was to highlight the Status of Physical Education in Northern and Southern States of India at Government Schools, ie, Punjab, Haryana, and Kerala. Data for the investigation were derived from a self-made checklist. The focus was mainly around the physical infrastructure, human resources, sports fund status, status of the physical education subject, total number of Government schools, and the sports achievements at the School National level under the banner of the School Game Federation of India.

Methodology

For the first phase of the study, a sample of 100 wrestlers and experts in the field of wrestling was selected as subjects related to the preliminary skill for the formation of the test battery and construction of the Freestyle Wrestling Skill Test. Samples of 200 subjects were selected for the third phase of the study to develop the norms for the final freestyle wrestling skill test. Subjects were the wrestlers of various selected schools, sports academies, and state wrestling teams who participated in school and open Championships.

In part one, the test items and subjects were selected to identify the final skill test item.

In the second part, finding the standard variable through expert suggestion, validity, reliability, and objectivity.

In the third part, the researcher is concerned with the administration of skill test items and the collection of data, statistical analysis of the data acquired, and development of the norms.

Research procedure

The subjects were informed about the test item before conducting the test in which they had to participate. To facilitate the best effort from the subject's assistance from a professionally qualified wrestling coach and the physical education teachers of the respective schools was required, and the investigator trained them physically to collect data perfectly before the data collection. To make the study more reliable, the researcher educated the wrestlers about the performance of the skill test and also explained the benefits of the skill test for their performance. The investigator assured them that this test would provide the best information about the level of their freestyle wrestling skill, which would help them improve their achievements for the forthcoming wrestling competitions.

There were single or basic test items in which the students participated energetically.

1. Fireman's carry Khalla Jung.

Procedure

The fireman's hold is a takedown ability or skill that resembles a typical strategy of holding a hurt or injured person by firemen. When performed on the right direction of the mate's body, the wrestler's left arm hand wrenches the partner's right arm elbow forward so the wrestler's head goes under the partner's right arm. Simultaneously, the wrestler's right arm gets within the companion's right leg's thigh and pushes it up, even though the wrestler's increases and comes to his left side, taking along the companion's and partner's down side to the Mat on his right side.

Scoring

The scoring was based on the expert's vision. Three experts gave the marks to the performer on a scale of 1-5 and assigned points according to the perfection of skill. The experts then compared the scoring of four variables e grip, stance, speed, execution, and wrestling skill. During the whole course of the process, the opponent remained stagnant. Three trials were given to the performer, and the best was recorded. There was no time bond, but the performer was directed to perform the skill quickly. The skill was noticed by the three judges. They scored independently, then the three different scores were added, the mean was calculated, and the final scoring was done.

Table No. 1

Show the rubric of the skill item of freestyle wrestling

Sr.	Rubric of the skill item	Scoring criteria
1	Grip	1, 2, 3, 4, 5
2	Stance	1, 2, 3, 4, 5
3	Speed	1, 2, 3, 4, 5
4	Execution	1, 2, 3, 4, 5
	Each skill item minimum-maximum score	4-20

These steps are as follows:

1. Selecting a criterion.
2. Developing experimental test items.
3. Computing validity, reliability, and objectivity.
4. Establishing norms

Table No. 2

Show the reliability coefficient of the Fireman's carries freestyle wrestling skill test for 18 to 19-year-old wrestlers.

Sr. no	Name of test item	"r"
1.	Fireman's carry	.80

The result was significant at < 0.05

Table no. 3

Show the objectivity coefficient of the Fireman's carry freestyle wrestling skill test for 18 to 19-year-old wrestlers.

Sr. no	Name of test item	"r"
1.	Fireman's carry	.86

The result was significant at < 0.05

Table no. 4

Show the mean and standard deviation of Fireman's carry freestyle wrestling skills for 18 to 19-year-old wrestlers.

Variable	N	Mean	Std. Deviation
Fireman's carry	200	14.23	0.56

Table No. 4 shows the mean and standard deviation of all selected freestyle wrestling skills for 18 to 19-year-old wrestlers. The Fireman's carry was found at 14.23. The mean result shows that a Fireman's carry was found good as per the norms

Table no. 5

Describes the standard score of the t-scale, hull scale, and sigma scale of Fireman's carry skill for 18 to 19-year-old wrestlers

Raw score	T-scale	Hull scale	Sigma scale
0	11.41	12.25	12.54
10	11.97	12.65	12.88
20	12.54	13.04	13.21
30	13.10	13.44	13.55
40	13.67	13.83	13.89
50	14.23	14.23	14.23
60	14.79	14.63	14.57
70	15.36	15.02	14.91
80	15.92	15.42	15.25
90	16.49	15.81	15.58
100	17.05	16.21	15.92

Table 5 describes the standard score of the t-scale, hull scale, and sigma scale of firemen's carry skill for 18 to 19-year-old wrestlers. The lowest score of t-scale, hull scale, and sigma of firemen carry skill, i.e., 11.41, 12.25, and 15.92, respectively, and the highest score was found, i.e., 17.05, 16.21, and 15.92, respectively. The results show the lowest and highest standard scores of t-scale, hull scale, and sigma scale of firemen's carry wrestling skill as per norms; scores lie in the poor and excellent categories.

Table no. 6

Show the percentile scores of the Fireman's carry freestyle wrestling skills test for 18 to 19-year-old wrestlers.

Percentile	Firemen' carry (20)	
5	13.333	
10	13.667	
15	13.667	
20	13.667	
25	14.000	
30	14.000	
35	14.000	
40	14.000	
45	14.000	
50	14.333	
55	14.333	
60	14.333	
65	14.333	
70	13.333	
75	13.667	
80	13.667	
85	13.667	
90	14.000	
95	14.000	

Table no. 6 shows the percentile scores selected freestyle wrestling skill test for 18 to 19-year-old wrestlers. The minimum score of the freestyle wrestling skill test was found at the 5th percentile, and the maximum score at the 95th percentile. The 5th percentile score of male wrestling skill, Fireman's carry skill, was found i.e. 13.33, and the 95th percentile score was 14.33, respectively. The result shown in the freestyle wrestling skill test was found lowest and highest percentile scores lie in the average and good category of percentile norms.

Table no. 7

Shows the 5-point rating scale of Fireman's carries freestyle wrestling skill test for 18- to 19-year-old wrestlers.

Sr. No	Score Range	Category	Total Number of Wrestlers in Each Grade	Percentage of Wrestlers
1	14.80 to 15.36	Excellent	28	14
2	14.24 to 14.79	Very good	35	17.5
3	13.68 to 14.23	Good	91	45.5

4	13.11 to 13.67	Fair	40	20
5	4.00 to 13.10	Poor	6	3

Table No. 7 Shows, for the better understanding of percentage-wise levels of the 5-point rating scale of firemen's carry free style wrestling skill for 18 to 19-year-old wrestlers.

Above the table and figure shows the 5-point rating scale of firemen carrying freestyle wrestling skill for 18 to 19-year-old wrestlers. The norms for wrestlers show scores in between Excellent -14.80-15.36, Very good -14.24 to 14.79, Good -13.68 to 14.23, Fair- 13.11 to 13.67, and Poor- 4.00 to 13.10. It was found that 28 wrestlers which is 14% falls in the scale of Excellent, 35 wrestlers which is 17.5% falls in the scale of Very good, 91 wrestlers which is 45.5% falls in the scale of Good, 40 players which is 20% falls in the scale of Fair and 6 wrestlers which is 3% falls in the scale of Poor.

Conclusions

1. Selected Fireman's carry of the freestyle wrestling variables/ fundamental skill test item analyzed was found to be significantly related to freestyle wrestling playing ability.
2. The freestyle wrestling skill test ultimately could retain a single skill item, which can successfully measure the freestyle wrestling skill ability of wrestlers of 18 to 19 years with acceptable face validity, high reliability, and objectivity.

Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the research, authorship and publication of this article.

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