Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 5 (May) (2025)

The Impact of Olympic Weightlifting Training versus Powerlifting Training on the Strength Fitness of Intermediate Play-Level Weightlifters; A Comparative Study

Saqib Fayyaz
Ph.D. Scholar at Center for Physical Education, Health and Sports Science, University of Sindh, Jamshoro
Email: saqibfayyazpk@gmail.com

Prof. Dr. Soniha Aslam
Professor at Center for Physical Education, Health and Sports Science, University of Sindh, Jamshoro
Email: soniha.aslam@usindh.edu.pk

Abstract
An Olympic weightlifting and a powerlifting belongs to the strength sports family. The two skills of the Olympic weightlifting are snatch plus clean and jerk whereas three skills of powerlifting are back squat, bench press and dead lift. The performance of both sports competitors noted in kilogram unit on a standard score board. Over the course of recent times a trend was observed by the researcher that intermediate play-level weightlifters were distracting from practicing their professional weightlifting sports to exercising powerlifting sport skills. Upon investigation the researcher came to know that they believed such a way enhances their strength fitness which later helps them achieve their weightlifting sports targets. The objective of the current study is to examine if the Olympic weightlifting training or powerlifting training enhance the strength fitness of intermediate play-level weightlifters or not? Two intermediate play-level weightlifters groups' experiment was administered using purposive sampling technique i.e. 9 participants for weightlifting and other 9 participants for powerlifting with the follow-up of sport-specific training programs for 8-weeks duration. The results of Independent samples t-test using SPSS version 23 showed that after 8-weeks period the weightlifting sport-specific group of intermediate play-level participants performed better in strength fitness than the non sport-specific powerlifting group participants. Therefore it is concluded that practicing the sport-specific skills by the intermediate play-level weightlifters is the only way to improve and procure next play-level sports however distract by practicing other sports skills may headed to the non progressive sports career and cause of injury.

Keywords: Olympic weightlifting, Powerlifting, Intermediate play-level, Strength fitness, Sport-specific, Training program. Weightlifters.

Introduction
The Olympic weightlifting is a strength sport where weightlifters used to follow the training methods that enhance the strength of an individual. The aim of the contestants is to lift the maximum weight overhead than their competitors to win the competition. The Olympic weightlifting has two styles of lifting the weight overhead i.e. two-handed snatch and two-handed clean and jerk. There are

ISSN Online: 3007-3154
ISSN Print: 3007-3146

predefined ranges of bodyweight categories for men and women separately and weightlifters need to participate within these bodyweight categories according to their own bodyweight on the competition. The competition starts with the snatch event and ends with the clean and jerk event. A total of six lifts allotted to each participant on the competition for both the styles of lifting the weight i.e. three for the snatch and three for the clean and jerk. The sum total of both the event's best lifted weight considered the performance of an individual on the competition which is posted in the kilogram unit on the standard scoreboard (T. Editors of Encyclopaedia, 2016). Moreover Olympic weightlifting has anaerobic energy provision system (synthesize without oxygen) in nature i.e. at competition participants used ATP-PCr (adenosine triphosphate – phosphocreatine) mode, also known as the ready form of energy however the same participants may use the Glycolytic mode in their training sessions (Keren Susan Cherian, 2021). Some of the recent researches also claimed that Olympic weightlifting training causes the boost to individual's explosive strength along with speed and considered so valuable to enhance other sports participants performances as compare to other traditional training methods thus nowadays Olympic weightlifting skills are formally added in the following sports training sessions to obtain advantage of speed and strength fitness e.g. athletics track and field events (jumping, running and throwing) performances (Daniel Hackett et al., 2015). Olympic weightlifting training plays an important role to enhance health fitness along with considered valuable to boost skill fitness of weightlifters at all the play-levels i.e. recreational, intermediate, advanced and elite (The Editor Gold Crown Foundation, 2019), (The Editor Players sport and social group). Furthermore a well-structured Olympic weightlifting training program promotes an individual's motor abilities, improves speed and effectively benefits the youth development (Valentin Panayotov, 2022). There are number of researches based upon bibliometric analyses shows that knowing the Olympic weightlifting benefits by the modern influencers in the field of health and sports fitness people are practicing snatch plus clean and jerks in their regular training programs to experience best possible fitness outcomes from last decade (Suraj Kumar, 2024). The experimental researches conducted on the training of the ten-to-twelve years beginners comparing Olympic weightlifting training with other traditional resistance trainings such as plyometrics along with jumping and throwing events of athletics results that the training programs that were in combination with Olympic weightlifting training skills caused better fitness levels of the samples' health and improved growth (A. Chaouachi et al., 2014). Moreover combination of the Olympic weightlifting training with sport-specific training enhanced the performance of young male as well as female handball athletes as well (B. Slovak et al., 2019). The best sportive skills to perform in an aim to remove excessive fat deposits from a body, the repetitions (volume) of Olympic style weightlifting i.e. snatch plus clean and jerk with light weight (intensity) is considered the best training for obese individuals (The Editor USA Weightlifting, 2022). Furthermore Olympic weightlifting training shows valuable outcomes in the management of the body mass practices of international level weightlifters (Amie M. Cox et al., 2024). In another experiment which was administered for the four-weeks on the beginner level jumpers, the results were statistically proven that with the Olympic weightlifting training the sample's speed, agility, power performances and jumping ability was ameliorated (Šime Veršić et al., 2023).

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 5 (May) (2025)

Likewise Olympic weightlifting the powerlifting sport also belongs to the strength sport family. Contestants used to lift maximum weight with controlled movement of three different styles of lifting the weight sequentially i.e. (a) back squat, (b) bench press and (c) dead lift whereas three attempts for each event allotted to every participant of the competition and the sum total of best lifts of each style of lifting the weight is recorded as the performance of a participant and noted in kilogram unit of weight, the one who wish to win the contest need to lift more weight in sum total than h/her competitor (Ferland et al., 2019), (Dan Austin & Bryan Mann, 2022). There are varieties of training programs in classic powerlifting to uplift the performance levels of intermediate play-level athlete moreover this sport needs massive muscle mass to meet the strength requirements of an athlete for the preparation of a competition (M. Roztorhui et al., 2023). A recent study proved that the powerlifting training is impactful if designed on scientific principles for genders. The same study shows significant results on the women based on meso-cycles and macro-cycle of powerlifting training. It also indicates the gradual increases of desired outcome rather than overnight changes. The powerlifting training causes the enhancement of cardio-vascular endurance and the timely prevention of over training (O. V. Hordiienko et al., 2024). In another study i.e. based on the literature review of renowned sources of research database (PubMed, Embase, SPORTDiscus and Web of Science) from January 2015 to February 2024 the reviewers assessed the injury ratio and types of injuries occurs in Olympic weightlifting and powerlifting. The results of the systematic review shows that during the one thousand hours of training in the Olympic weightlifting sport the most common injury sites were reported i.e. knee, shoulders, hands/fingers lower back. Contrary to Olympic weightlifting in the powerlifting sport during the one thousand hours of training the reviewers found the most common injury sites were reported i.e. shoulder and elbow plus upper arm, lower back and pelvis, keeping in view these reported results the reviewers concluded that the training methodologies with injury prevention and safe training practices in both the sport is useful for long term effective sport career of an individual of both gender (Matthew Jia-Yuan Tung et al., 2024). Powerlifting is an unpredictable sport respective to the risk factors of injury a powerlifter may face during training. This issue was identified with the help of previous researches through the cross sectional and observational studies but a recent research claimed that in almost all existing sport the training load is prospectively integrated in the training program as the pre-emptive measure to prevent injury but in powerlifting sport this factor is not placed yet. The research outcome suggested if injury management factor highlighted according to the play-levels of powerlifters so their injury prevention may be manageable for their elongated careers (Fredrik Andersson & Lars Berglund, 2023). Physical training for a professional individual is essential to begin any sport especially strength sport. It is necessary for a coach or instructor to include physical training sessions for the professional students of higher education those who used to compete at university level powerlifting competitions. The physical training further are of two types i.e. GPT (general physical training) and a SPT (specific physical training) combination of both plays an important role in sport-specific conditioning of an athlete (V. Dorgan & Dumitru Prodan, 2021), (Dan Austin & Bryan Mann, 2022). There are number of studies that unearth the impact of powerlifting training on physical fitness and physiological efficiency but a recent study enlightens a positive role of

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 5 (May) (2025)

powerlifting training methods on the athlete's psychological health i.e. emotionally sound, mental training, burnout control, goal setting for competition, visualization, self talking and a controlled arousal towards targets achievement (Scott P. Barnicle & Maxime Lepage, 2018). The one who needs to understand and learn the deep knowledge of the powerlifting sport such as; kinesiology, nutritional facts, its psychology and physiological changes and requirements comprehensively should go after its two parts i.e. understanding academically and by doing its practical (following the powerlifting training program) (Dan Austin & Bryan Mann, 2022). Powerlifting training process and its management system is useful for the mental and physical growth of youngsters moreover the sport plays an important role in the enhancement of strength. The study that assessed the factors in powerlifting sport i.e. control the physiological development of locomotor system and biological age of the youngsters and found its useful results on powerlifters (Vitaliy Avsiyevich, 2016).

The researcher himself is a former national-level weightlifter, having sixteen years experience as an athlete and seven years experience as a weightlifting coach at various levels i.e. (district, club, college, university, and a national coach). Over the course of recent times the researcher observed a new trend among the male and female weightlifters of four different levels of play or competition i.e. (i) beginner (players are new to sport, focused on learning the basics of chosen sport usually found joy in training sessions), (ii) intermediate (players have some experience of a sport training as well as competition and setting future targets locally), (iii) advanced (players became experienced in sport-specific training and capable of securing the non-medal positions on competitions) and (iv) expert (these players are considered expert for strategy making to secure top position at top level competition of any country) (The Editor Gold Crown Foundation, 2019), (The Editor Players sport and social group) that many of these level players were switching their professional sport from weightlifting to powerlifting. The researcher upon closely monitored the fact and identified the three main possible reasons i.e. (a) the potential disagreements of the renowned weightlifter(s) with the Pakistan Weightlifting Federation (Natasha Raheel, 2024), (b) some female weightlifters switched their career to powerlifting sport seeking for the fame and recognition only (The Editor Dawn, 2016) and, (c) a number of intermediate play-level weightlifters rapidly moving towards powerlifting sport as they believed that practicing only a powerlifting sport causes the enhancement in their strength fitness which later helps them lift more weight in weightlifting sport (The Editor Business Recorder, 2024).

The purpose of the present research is to counteract against a research problem i.e. the researcher is going to find out a (c) third above stated possible reason i.e. some intermediate play-level weightlifters believed that just practicing the powerlifting sport would help in the increase of their strength fitness that later improve their weightlifting targets whereas the other above stated factors are not the prime focus of the present study that included; some renowned weightlifters' career effected by the political influence and some weightlifters switched to and pursuing powerlifting sport for the fame and recognition. The significance of the present study is primarily related to the understanding of those intermediate play-level weightlifters who believed that practicing only powerlifting sport is the source of enhance weightlifters' strength fitness to support their future weightlifting targets moreover secondarily it may also be useful for the Olympic

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 5 (May) (2025)

weightlifting as well as powerlifting coaches (those who are at the initial stage of their coaching career) to promote the general perception among their players that every sport has its own requirements related to several variables such as; sport's nature i.e. (strength or non-strength sport), skills i.e. (technique and how to master it with improved sport results), nutrition i.e. (keeping in view the facts either nutritional intake is for the gain of energy or to gain bodyweight), rest i.e. (the recovery of musco-skeleton breakdown and restoration of mental fatigue after training sessions), training i.e. (methodologies to improve one's performance result reference to their physiological demands), competition i.e. (strategies and other factors that can help win competition) and emotional intelligence i.e. (psychological needs of players) so this is not necessary while practicing another sport one can achieve competition targets of one's professional sport however in some sport a portion of skill training of other sport may useful. Thus to disprove the existing perception of the subject (intermediate play-level weightlifters) the researcher is going to conduct an 8-weeks experiment for intermediate play-level men weightlifters and divided them in to two separate groups for the comparison that which is better either Olympic weightlifting or powerlifting sport is better for the optimum strength outcomes of intermediate play-level weightlifters. The rationale of the current study is to promote the importance of sport-specific training and its targeted outcomes among players of both the strength sports i.e. Olympic weightlifting and powerlifting as it is the only way to ameliorate one's performance moreover coaches should emphasis on the strict follow-up of the scientifically designed and calculated training programs of both the strength sports, given that nowadays modern training programs are designed on the scientific grounds which covers all the possible inadequacies of one's performance.

Objective:

- To examine if the Olympic weightlifting training or powerlifting training enhance the strength fitness of intermediate play-level weightlifters or not?

Hypothesis:

H_1: Olympic weightlifting training has the significant effect on the strength fitness of intermediate play-level weightlifters than the powerlifting training.

Material and Methods

In an attempt to find out the possible solution of the current research problem an applied, experimental research method was employed based on the comparison of strength performance between two intermediate play-level weightlifters' groups. The 8-weeks experiment took place separately in both the sports-specific Olympic weightlifting and powerlifting clubs in Lahore. The purposive sampling technique was used to include 18 male intermediate play-level weightlifters those who were not in any kind of regular training for minimum around six months duration and participants other than mentioned criteria were excluded from the current study. The age range of the selected sample was 16-22 years old. Henceforth then with the help of draws and selected sample's consent divided them into two separate groups of 9 participants for Olympic weightlifting training group and other 9 participants for powerlifting training group.

An 8-weeks training program designed separately for both the groups' participants (weightlifters and powerlifters) keeping in view the equivalent standards of both

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 5 (May) (2025)

the sports participants included; duration (time) for daily training sessions i.e. 120 minutes in the evening (including warm-up, focused training and cool down), six times training in a week days (frequency), number of sets and repetitions (volume) and lastly the training weight load percentage extracted with the percentage of participant's own bodyweight (intensity) except the sport-specific equipments, clubs and skills (snatch plus clean and jerk for Olympic weightlifting sport and back squat, bench press and dead lift for powerlifting sport).
The training was designed based on the daily repetitions, sets and load for both the sports skills i.e. on Monday, Tuesday, Thursday and Friday; 50% 10-reps×1-set, 60% 8-reps×1-set, 70% 6-reps×1set, 80% 5-reps×1set, 90% 3-reps×1set and 100% 1-rep×3-sets. However a maximum training (with single repetition) was scheduled twice a week i.e. on Wednesday and Saturday for posting the best performance of both the group participants throughout the 8-weeks and Sunday complete rest given to the participants for their recovery process.
The camry electronic handgrip dynamometer (Robert J. Wood, Camry Electronic Handgrip Dynamometer, 2012) was used to measure the strength fitness of both the groups' participants twice, initially at a time before introducing the training program and secondly after the accomplishment of 8-weeks study duration and tally the results (standings of both groups' participants) with camry electronic handgrip dynamometer standard norms (Robert J. Wood, Handgrip Strength Norms, 2012).

Data Analysis & Discussion

A tool IBM SPSS (Statistical Package for the Social Sciences), version 23 was used for the data analysis. The strength fitness results that were measured with the camry electronic handgrip dynamometer, noted in kilogram unit against the pre and post measurement separately after the completion of 8-weeks training program for both weightlifting and powerlifting training groups' participants. Henceforth the mean value was calculated for pre and post camry electronic handgrip dynamometer measurement result (in kilogram unit) of 9 participants of Olympic weightlifting training group and the other 9 participants of powerlifting training group (a sum total of 18 participants). Lastly with the help of SPSS applied an Independent Samples t-test for both the groups' extracted mean values to compare either weightlifting or powerlifting training group scored well in strength fitness.

Independent Samples t-test

Table 1: *Descriptive Statistics associated with strength mean value (i.e. kilogram) results of pre and post sport-specific 8-weeks training of Weightlifters vs. Powerlifters*

Participants		N	Mean	Std. Deviation	Std. Error Mean
Mean_Strength	Weightlifters	9	51.256	3.5760	1.1920
	Powerlifters	9	47.900	2.4026	.8009

Table 2: *Independent Samples t-test Results*

Dialogue Social Science Review (DSSR)
www.thedssr.com

ISSN Online: 3007-3154
ISSN Print: 3007-3146

DIALOGUE SOCIAL SCIENCE REVIEW

Vol. 3 No. 5 (May) (2025)

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Mean_Strength Equal variances assumed	.873	.364	2.337	16	.033	3.3556	1.4361	.3113	6.3999

The independent samples t-test was performed and the test result was t(16) = 2.33, p = .033 i.e. < .05. As the p-value is smaller than the .05 therefore, it is statistically proved that the Olympic weightlifting group intermediate play-level participants performed with significantly larger mean scores in strength performance than the powerlifting group intermediate play-level participants. Figure no. 1 shows the graphical representation of both the group intermediate play-level participants' strength fitness results.

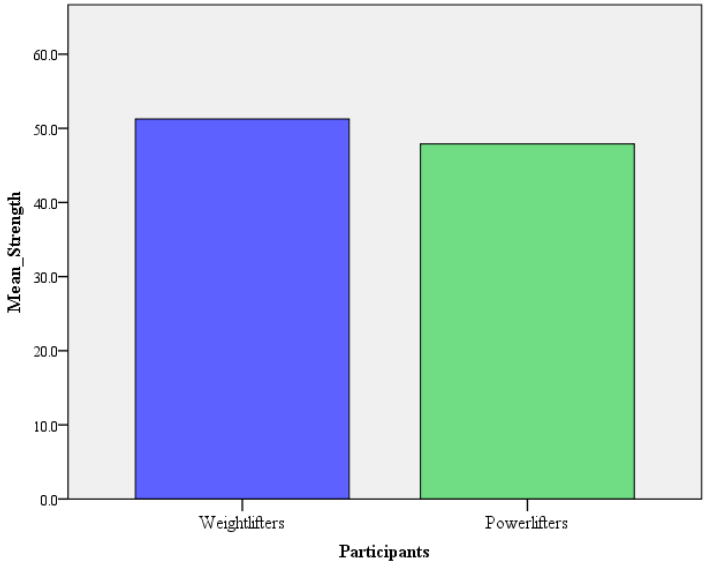

Figure 1: Mean of strength value (i.e. kilograms) results of pre and post sport-specific 8-weeks training of Weightlifters vs. Powerlifters bar graph (with 95% CIs)

The analysis result of the current study shows i.e. for the intermediate play-level weightlifters those who believed only exercising powerlifting sport skills enhance their strength fitness which later helped them acquiring their weightlifting set targets; is a baseless consideration. Instead the analysis result showed that exercising the skills of targeted strength-sport is the useful way to achieve set sport targets of an individual. In the current study the intermediate play-level weightlifters those who were out of any regular training for minimum six months duration and within just 8-week's regular sport-specific training (Olympic weightlifting) they performed better in their strength fitness assessment than those intermediate play-level weightlifters who used to exercise powerlifting sport

ISSN Online: 3007-3154
ISSN Print: 3007-3146

during experiment. Thus to be focused and result-oriented the coaches along with intermediate play-level weightlifters should stick themselves to regularly exercise weightlifting sport-specific skills on professional basis. However a combination of other strength-sport training sessions may be included in one's training plan but based upon any deficiency of sport-specific competition though consultation in this regard with coach is supreme.

Conclusion

A new unusual trend was observed by the researcher that some of the intermediate play-level weightlifters were distracting from their professional sports training i.e. Olympic weightlifting to exercising powerlifting sport skills and upon scrutinized this matter the researcher came to know the fact that these intermediate play-level weightlifters believed that only practicing powerlifting skills would enhance their strength fitness which later help them to achieve their set weightlifting targets. However in an attempt to solve the existing research problem the researcher conducted an 8-weeks experiment with the sample selection of intermediate play-level weightlifters those were out of any training for minimum six months duration moreover designed and introduced a separate sports-specific training programs for both the weightlifting and powerlifting groups' participants with the same standards i.e. (intensity, volume, frequency, load and time) except the clubs, equipments and the skills to practice. The result after 8-weeks duration shows that the weightlifting group participants scored better in strength fitness assessment than the powerlifting group participants therefore it is generally and statistically proven that remain stick on to the sport-specific training of one's own professional sport is the pathway towards attain strength fitness and targets achievement rather than training other sports for desired achievements.

Recommendations

The present study case was investigated i.e. a trend was prevailing among the intermediate play-level weightlifters those who were practicing the powerlifting sport skills in an aim to enhance strength fitness and consider it beneficial for them to achieve their weightlifting targets. The researcher conducted an 8-weeks experiment to solve this reported issue. In the view of current study's findings it is recommended that weightlifters of intermediate play-level should focus practicing only on their planned sport-specific training programs and always look forward to refine and master their sports skills and performance. This is the pathway to procure the next phase of advance play-level rather than exercising non sport-specific skills or training programs to seek improvements and advancements of their set sport-specific goals. A distraction from one's professional sport may be the cause of experiencing serious injury which could lead to ruin one's professional sports career. The coaches can play their key role by arranging a counseling session at least once every week to prevent players from such unrealistic rumors and motivate them intrinsically to keep them focused on the achievement of their set sports targets. Extrinsic motivation i.e. tangible rewards and timely recognition could also be meaningful for such players to hook them onto their professional sports targets. The incorporation of non sport-specific training sessions with sport-specific training sessions may only be planned by the coaches when an individual is experiencing deficiency in specific area of performance outcomes.

ISSN Online: 3007-3154
ISSN Print: 3007-3146

Vol. 3 No. 5 (May) (2025)

References

A. Chaouachi et al., R. H. (2014). Olympic Weightlifting and Plyometric Training with Children Provides Similar or Greater Performance Improvements than Traditional Resistance Training. *Journal of Strength and Conditioning Research, 28*, 1483-1496.

Amie M. Cox et al., C. L.-E. (2024). Body Mass Management Practices of Olympic Weightlifting Athletes. *International Journal of Sport Nutrition and Exercise Metabolism, 35* (1), 67-75.

B. Slovak et al., L. C. (2019). EFFECTS OF TRADITIONAL STRENGTH TRAINING AND OLYMPIC WEIGHTLIFTING IN HANDBALL PLAYERS. *Revista Brasileira de Medicina do Esporte, 25* (3), 230-234.

Dan Austin & Bryan Mann. (2022). *Powerlifting: The complete guide to technique, training, and competition* (2nd Edition ed.). Champaign: Human Kinetics.

Daniel Hackett et al., T. D. (2015). Olympic weightlifting training improves vertical jump height in sportspeople: a systematic review with meta-analysis. *British Journal of Sports Medicine, 50*, 865-872.

Ferland et al., P.-M. C. (2019). Classic Powerlifting Performance: A Systematic Review. *Journal of Strength and Conditioning Research, 33*, S194-S201.

Fredrik Andersson & Lars Berglund. (2023, August 4). Development of A Training And Injury Log For Powerlifting: A Feasibility Study. *International Journal of Strength and Conditioning* , 1-13.

Keren Susan Cherian. (2021). Energy Expenditure Pattern of Adolescent Athletes: A Narrative Overview. *International Journal of Sports Science and Performance, 1* (1), 1-8.

M. Roztorhui et al., O. T. (2023). JUSTIFICATION OF THE MAIN WAYS TO IMPROVE THE PHYSICAL TRAINING OF ATHLETES FOR CLASSIC POWERLIFTING. *Scientific Journal National Pedagogical Dragomanov University, 167* (7), 1-4.

Matthew Jia-Yuan Tung et al., G. A. (2024). Injuries in weightlifting and powerlifting: an updated systematic review. *BMJ Open Sport & Exercise Medicine, 10*, 1-12.

Natasha Raheel. (2024, August 8). *Strongman Nooh Dastgir Butt eyes 2028 Games after mishap*. Retrieved April 16, 2025, from The Express Tribune: https://tribune.com.pk/story/2486568/strongman-nooh-dastgir-butt-eyes-2028-games-after-mishap

O. V. Hordiienko et al., V. Z. (2024). POWERLIFTING TRAINING METHODS FOR WOMEN AGED 35–40 YEARS: ORGANIZATION AND STRUCTURE OF THE TRAINING PROCESS FOR ACHIEVING MAXIMUM SPORTS RESULTS. *Clinical and Preventive Medicine, 8* (38), 137-143.

Robert J. Wood. (2012, March). *Camry Electronic Handgrip Dynamometer*. Retrieved November 9, 2023, from Topend Sports: https://www.topendsports.com/testing/products/grip-dynamometer/camry.htm

Robert J. Wood. (2012). *Handgrip Strength Norms*. Retrieved November 13, 2023, from Topend Sports: https://www.topendsports.com/testing/norms/handgrip.htm

ISSN Online: 3007-3154
ISSN Print: 3007-3146

Vol. 3 No. 5 (May) (2025)

Scott P. Barnicle & Maxime Lepage. (2018). Lifting the Mind: A Case Study of Applied Sport Psychology in Powerlifting. *International Journal of Physical Education, Fitness and Sports, 7* (1), 1-5.

Šime Veršić et al., A. D. (2023). Effects of 4-week Olympic weightlifting training on speed and power performance in recreational athletes: Olympic weightlifting effects on speed and power. *Studia Sportiva, 17* (1), 35-41.

Suraj Kumar, R. C. (2024). Bibliometric Insights into Olympic Weightlifting Research Trends. *Journal of Ravishankar University (Part-A: SOCIAL-SCIENCE), 30* (1), 43-53.

T. Editors of Encyclopaedia. (2016, January 4). *Weightlifting*. Retrieved June 05, 2023, from Britannica: https://www.britannica.com/sports/weightlifting

The Editor Business Recorder. (2024, October 10). *Pakistan's Nooh Dastgir secures gold in Commonwealth Powerlifting Championships*. Retrieved April 2025, 16, from BUSINESS RECORDER: https://www.brecorder.com/news/40326474/pakistans-nooh-dastgir-secures-gold-in-commonwealth-powerlifting-championships

The Editor Dawn. (2016, September 7). *Pakistani Powerlifting Duo a Rare Bright Spot for Christian Minority*. Retrieved April 2025, 16, from DAWN News: https://www.dawn.com/news/1282630

The Editor Gold Crown Foundation. (2019, May 29). *WHAT DO THE NEW "LEVELS OF PLAY" MEAN?* Retrieved April 5, 2025, from Gold Crown Foundation: https://www.goldcrownfoundation.com/sports-levels-of-play/

The Editor Players sport and social group. (n.d.). *Levels of Competition*. Retrieved April 5, 2025, from PLAYERS (Sport and Social Group): https://www.playerssports.net/page/levels#:~:text=RECREATIONAL:%20Just%20for%20fun%2C%20little,:%20Very%20experienced%2C%20skilled%20players.

The Editor USA Weightlifting. (2022). *USA Weightlifting*. Retrieved June 20, 2023, from Top 10 Reasons to Train the Olympic Weightlifting Movements: https://www.usaweightlifting.org/weightlifting101/top-10-reasons-to-train-the-olympic-weightlifting-movements

V. Dorgan & Dumitru Prodan. (2021, December 1). THE PHYSICAL TRAINING OF STUDENTS PRACTISING POWERLIFTING IN PHYSICAL EDUCATION AND SPORT UNIVERSITIES. *Book of Proceedings of the 11th International Congress of Education, Health and Human Movement* , 52-61.

Valentin Panayotov, N. Y. (2022). INFLUENCE OF OLYMPIC WEIGHTLIFTING TRAINING ON MOTOR ABILITIES IN CHILDREN. *PROCEEDING BOOK, 1*, 68-72.

Vitaliy Avsiyevich. (2016, November 26). Training Process Management for Youngsters Engaged in Powerlifting. *Social Science Research Network* , 1-162.