



ক্রীড়ায় শ্রেষ্ঠত্ব
Excellence in Sports

BKSP JOURNAL OF SPORTS SCIENCE

Volume 21

May 2024



BANGLADESH KRIRA SHIKKHA PROTISHTHAN (BKSP)

ZIRANI, SAVAR, DHAKA.

Web : www.bksp.gov.bd



ক্রীড়ায় শ্রেষ্ঠত্ব

Excellence in Sports

BKSP JOURNAL OF SPORTS SCIENCE

ISSN: 2957-9287

Volume 21

May 2024

BANGLADESH KRIRA SHIKKHA PROTISHTHAN(BKSP)

ZIRANI, SAVAR, DHAKA, BANGLADESH.

Web : www.bksp.gov.bd

EDITORIAL BOARD

CHIEF ADVISER

Brigadier General Syed Md. Motaher Hossain, ndc, psc
Director General. BKSP.

ADVISERS

1. Colonel Md. Mizanur Rahman, psc
Director (In-charge) Sports Science &
Director (Training), BKSP.
2. Mohammad Anwar Hossain
Deputy Secretary
Director (Admin & Finance), BKSP.

EDITOR

Nusrat Sharmeen
Deputy Director (In-charge) Sports Science
BKSP.

MEMBERS

1. Abu Tareq
Senior Research Officer (Sports Biomechanics), BKSP.
2. S M Zahangir Alam Rony
Senior Research Officer (GTMT), BKSP.
3. Sadeka Yasmin
Research Associate (Sports Biomechanics), BKSP.
4. Md. Shafiqul Islam
Sports Psychologist, BKSP.

DESIGN & PHOTOGRAPHY

1. Md. Ashrafuzzaman. Public Relation Officer, BKSP.
2. Rajib Kumar Deb. Photographer, BKSP.

PUBLISHED

31 May 2024

CONTENTS

01	Comparison of off Drive Technique Between University Level Player and Cab Player in Respect of Some Selected Mechanical Parameter	<p>Dr. Bodhisattwa Pradhan, Assistant Professor, Department of Physical Education , Mugberia Gangadhar Mahavidyalaya, Bhupatinagar, Purbamedinipur. Email: bodhisattwapradhan2013@gmail.com</p>
02	A Probe Into Sports Perfectionism of the School-Going Adolescents	<p>Moumita Karmakar Assistant Professor, Debnarayan Shiksha Sansthan (B.Ed. & D.El.Ed. College) Sonarpur, South 24-Parganas, West Bengal & Research Scholar, Department of Education, Swami Vivekananda University, Barrackpore, West Bengal, India</p> <p>Malay Halder Assistant Professor, Parameswar Mahavidyalaya (B.Ed.), Namkhana South 24-Parganas West Bengal & Research Scholar, Department of Education Swami Vivekananda University, Barrackpore, West Bengal, India</p> <p>Biswajit Saha Assistant Professor, Sponsored Teachers' Training College and Research Scholar, Department of Education, Sidho-Kanho-Birsha University Purulia, West Bengal, India, Purulia, West Bengal</p> <p>Samirranjan Adhikari Professor, Department of Education, Sidho-Kanho-Birsha University Purulia, West Bengal, India</p>
03	Epidemiology and risk factors for Chronic Ankle Instability in Adolescent Female Football Players at BKSP	<p>A F M Samir Ullah MBBS, FCGP, FSR, DipSpMed Doctor (Sports Medicine), BKSP Email: dr.afmsamir@gmail.com</p> <p>Tabassum Tanjina MBBS, PGD (Exercise Physiology), DipSpMed Research Associate, Pi Research Development Center, Dhaka</p>
04	Examining Injury rates in Taekwondo Karate and Wushu Athletes at BKSP	<p>Sharmin Islam Students, Post Graduate Diploma in Exercise Physiology, BKSP Dhaka, Bangladesh.</p> <p>Dr. Md. Shamim Rahman Medical Officer Bangladesh Krira Shikkha Protisthan, (BKSP) Dhaka, Bangladesh Email: shamimem713@gmail.com</p>

05	Mental Toughness Status of Boxing Sportspersons of BKSP and those Bhutan	<p>Md. Shafiqul Islam Sport Psychologist (Sports Psychology), Bangladesh Krira Shikkha Protisthan, (BKSP) Dhaka, Bangladesh E-mail: shafiq.126sm.du@gmail.com</p>	
06	A Brief Review and Discussion on the Importance of Optimum Nutrition in Sports Performance	<p>Salina Canadi Senior Lecturer Uttara University, Dhaka, Bangladesh. Department of Physical Education. Email: salinacanadi@gmail.com</p>	
07	Leg Strength Assessment of Bangladesh Armed Forces, Commando Selection Test	<p>S. M. Zahangir Alam Rony Senior Research Officer (GTMT) Bangladesh Krira Shikkha Protisthan (BKSP) Dhaka, Bangladesh. Email: ronyjamalpuri@gmail.com</p> <p>Amirul Islam Mehedy Student, PGD in Sports Science of Sports Training, BKSP, Dhaka, Bangladesh.</p> <p>Md. Masud Rana Student, PGD in Sports Science of Sports Training, BKSP, Dhaka, Bangladesh.</p>	
08	Comparison of the Gender Difference in Cognitive Distortion Among Sports Person	<p>Md. Ashadujjaman Mondol Students, Post Graduate Diploma in Sports Psychology, BKSP, Dhaka</p> <p>Nusrat Sharmeen Senior Research Officer (Sports Psychology), Bangladesh Krira Shikkha Protisthan,(BKSP) Dhaka, Bangladesh Email: nusratsharmeen1975@gmail.com</p>	
09	A Psychological Case Study of a Cricket Player During ACL Injury Rehabilitation	<p>Joy Saha Physiotherapist Bangladesh Krira Shikkha Protisthan, (BKSP) Dhaka. Bangladesh. Email: joy.saha.ph@gmail.com</p>	

Comparison of off Drive Technique Between University Level Player and Cab Player in Respect of Some Selected Mechanical Parameter

Dr. Bodhisattwa Pradhan

Assistant Professor,
Department of Physical Education,
Mugberia Gangadhar Mahavidyalaya,
Bhupatinagar, Purbamedinipur.
Email: bodhisattwapradhan2013@gmail.com



Abstract

The origins of cricket lie somewhere, in the Dark Ages-Probably after the Roman Empire, almost certainly somewhere in Northern Europe. In the sport of cricket, batting is the act or skill of hitting the cricket ball with the cricket bat, to score run or prevent the loss of wicket. A drive is a straight batted shot, played by using the bat in a vertical area through the line of the ball, hitting the ball in front of the batsman along the ground. Given that batting is such an important part of the game, it is surprising that very little Biomechanics research has been undertaken in this area of sports. The main objectives of the present study was to compare the off drive techniques between University player and CAB player. Five University players and five CAB players were selected randomly as the subject for the present study. The selected mechanical parameters were height of c.g, angles at the hip joint, angles at the knee joint, angles at the left elbow joint ,angles at the ankle joint. Four video cameras were used to record the movement of total batting techniques of the subject. After recording, the movement were analysed by using freeze frame technique with the help of Machinosh Edit Software – final cut pro. Results revealed that there was a significant difference in height of c.g during execution of off drive techniques. There was no significant difference between the angles at the hip joint, knee joint, elbow joint, ankle joint both for University and CAB players.

Key words: *off drive, c.g, angles at hip joint, angles at the left knee joint, angles at the left ankle joint angles at left elbow joint .*

Introduction

Games and sports play an important role in our life. In spite of different problems for games and sports, with the help of media, especially the electronic media attracts the new generation to the field of sports. The boys and girls are mostly attracted to the games of cricket.

Thanks to the great cricketer like Sachin Tendulaker, and others the youngsters between the age group of five years to sixteen years are attracted to the game of cricket. In the court-years of houses, even in mud- built verandah of the houses are used to play cricket. Rough bats made of cheap woods or plank like or made of plastic or fiber and Tennis balls are used to play the game. Even the boys and girls in the rural areas play cricket with Tennis ball in the paddy field and gardens and cremation grounds.

All these affect their technique and skills. In spite of best efforts and hearty endeavour their future prospects are nipped in the bud. In some cases socio – economic status of the teenage boys and girls stand against their future hope to become a good cricketer.

Cricket appears to have an eventful and colourful history although the exact origins of the game are unknown. In the year of 1900 cricket made its first and only appearance in Olympic. The ICC was formed in 1908.A number of words are thought to be possible

sources from the term “Cricket” .In the earliest known references to the sport in 1958, it is called creckett The name may have been derived from the Middle Dutch Krickle meaning a stick, or the old English crice meaning a cruch or staff. Another possible source is the Middle Dutch word Krickstole, meaning a long low stool used for kneeling in church and which resembled the long low wicket with two stumps used in early cricket .No one knows that when and where cricket began but there is a body of evidence, much for it. Circumstantial, that strongly suggests that the game devised during Saxon or Norman times by children living in the Weald, an area of dense woodland and cleaning in South- East England that lies across Kent and Sussex.

Alan, C. Kiber and Alan R. Hansford (1993) analyzed various types of batting techniques. All strokes were captured using two synchronized high speed video cameras; nine were selected for kinematic analysis. These movement sequences were ten manually digitalized at a sampling frequency of 125Hz using APAS motion analysis software. The result of this study indicated that the batsman used movement patterns that enabled important aspects of strokes production, such as the front stride, downswing of the bat, to be delayed so that additional information from ball flights could be assimilated. Front upper limbs segments constrained to work in unitary fashion. With the peak of horizontal end point, simultaneously the speed of each segment occurring almost just before impact. It has been suggested that these strategies serve to enhance stroke accuracy.

Cricket is the second most popular game in the world; the soccer is the most popular. It is a bat and ball game, which includes a variety of skills, batting is the most glamorous. At the highest level of the game, scoring runs and not being dismissed will bring fame and glory of a kind that is possibly unique in the world of sports (Woolmer B., 2008). Sports biomechanics is quantitative It can simply be described as the physics of mechanics applied in order to gain the greater understanding of athletic performance through the mathematical modeling, computer simulation and measurement (Reddy R.V.S., 2002) Earlier studies have illustrated the biomechanical principle related to cricket batting and evaluated the effectiveness of coaching cues (Davis, 1983; Elliot et al., 1993; Stretch et al., 1995). Batting in cricket is a quintessential example of a dynamic interceptive action in sports, and an ideal vehicle for studying interaction between perception and action.

Cricket appears to have an eventful and colorful history although the exact origin of the game is unknown. The biomechanics of the off drive and on drive have been found to be very similar with only minor differences occurring in their execution. Grip force patterns of top and bottom hands along with Kinematic analysis of selected strokes are the areas that have been investigated, however the underlying theme have been propounded by different researcher from the field of Biomechanics that, batting has many different styles and techniques.

It is strongly believed that biomechanical analysis can improve the technique of every batsman. It is the responsibility of the coach to ensure that the biomechanical information is described correctly and put into practice within an appropriate time frame. Paul Hurrison ,

who did Ph. D. in Sports biomechanics, also observed same type of biomechanical analysis on cricket. Elliott, B., Baker, J. and Foster, D. (1993) The kinematics and kinetics of the off-drive in cricket *The Australian Journal of Science and Medicine in Sport* 25(2):48-54. Batting is arguably the most exciting aspect of the game of cricket. In fact Benaud (1961, p.15) stated “... cricket is, first and foremost, a batsman’s game”. Batting strokes can range from those characterized by defense to those where the ball is hit with high velocity and direction in an attempt to score runs. The drive has often been regarded as the basic shot in cricket (New South Wales cricket Association (N.S.W.C.A.) manual, 1964) and as such must be learned by all batters. Of the five drives taught (straight, square, cover, off, on drives) the mechanics of the square drive and the cover drives are considered to be different to the other drives (Taber, 1973). While the technique similarities between the off-drive and straight drive were acknowledged (Bradman, 1958; Taber, 1973) the same consensus of opinions were not expressed by those authors with reference to similarities between the on-drive and off-drive. Other authors have reported that while the mechanics of these two strokes were very similar there were a number of minor differences between the two strokes (Bradman, 1958; Chappell, 1970). No research data were used to substantiate the views expressed in these coaching manuals or by high level players.

Elliott (1993) conducted a three dimensional analysis of the on-drive and the off drive and the off-drive batting techniques and found differences in the mechanical factors in the stroke production of the two strokes. Most of these have been conducted as a part of research on cricket in general rather than batsman in particular (Foster and Elliott et al., 1986; Stretch, 1987, 1990; Peens, 1996). Davis (1983) provided insight into the techniques of batting and questioned some of the established principles of coaching cricketer’s skills’ however; these results were not obtained under well- controlled experiments.

METHODOLOGY

Ten cricket players volunteered for the present study. Among them five (5) are CAB player (Cricket Association of Bengal) and other (5) are University player (Kalyani University) were selected as randomly for the present study. The subject’s age were ranged from 16-24 years. They had at least four or five years of playing experience. The CAB (Cricket Association of Bengal) player used to stay in different areas at Sonarpur, (South 24 Parganas). They played different types of tournament organized by CAB in a regular basis. Some of them used to play CAB school tournament also namely Dattu Fathkar Trophy etc. The data was collected from Sonarpur Sporting Union Ground, Kolkata and Kalyani University Ground, Kalyani. The main task was to compare the off drive techniques between CAB and University level players. Selected mechanical parameters were considered for the present study as follows

- i) The position of C.G.
- ii) Angles at left knee,

- iii) Angles at hip,
- iv) Angles at left ankle joint
- v) Angles at left elbow

These are considered for as the measuring criteria for the present study. For measuring and collecting data following instruments and tools were used for the present study.

- a) Marker with the adhesive tape was used for marking the point of interest like c.g, left knee, at hip, at left ankle joint, at left elbow.
- b) A standard cricket pitch was used for collecting the data, and other necessary equipment like Cricket kit bag and all other sports equipment.
- c) Four HD Video graphic Z7 cameras manufactured by Sony, Japan were used to record the total batting off drive techniques. Other necessary material like a reference stick used as the reference frame/scale, tripod stand for camera.
- d) The total movement of batting off drive techniques was analyzed with the help of Machintosh Edit Software – final cut pro.
- e) The captured movement was transferred from the camera to computer and a CD was made for the purpose of analysis. Then the recorded movement was displayed by computer and the movement of each subject was analyzed with the help of appropriate software i.e. Machintosh Edit Software – final cut pro. After projecting a particular frame the stickman configuration was drawn from the frame. For angle measurement the line was drawn on the screen on a transparent sheet to indicate the required limb position for each subject and each movement.

DESIGN OF THE STUDY AND STATISTICAL PROCEDURE

After projecting a particular frame the stickman configuration was drawn from the particular frame. For angle measurement the line was drawn on the screen on a transparent sheet to indicate the required limb position for each subject and each movement. The time information is obtained from the frequency of the camera (29fps). From the above mentioned procedure the kinematic parameters for the present study were recorded. The data for different selected parameters were obtained in form of numerical scores using Mc-Macintosh Edit software. These score were statistically analyzed for mean values and standard deviation and t- test were done.

RESULT AND FINDINGS

The recorded movement was subsequently projected in freeze frame conditions and necessary kinegram was developed. The measurement of the selected mechanical parameter was obtained from the kinegram with the help of scientific methods.

Table 1: t-test between University Player and CAB Player for Height of cg (cm.)

Parameters	University Player			CAB Player			MD	SED	t	Sig. Level
	Mean	SD	n ₁	Mean	SD	n ₂				
Height of cg (cm.)	0.40	0.03	5	0.61	0.06	5	0.21	0.03	7.20	**

N (n₁ + n₂) = 10, df = 8, Table value of t at 0.05 = 2.31 , Table value of t at 0.01 = 3.36, ** Sig. at 0.01 level

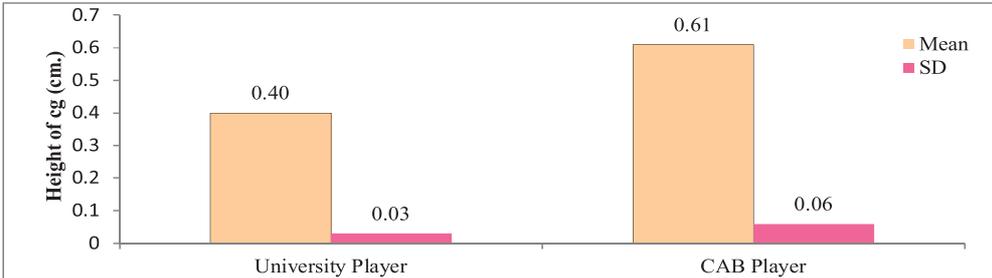


Fig 1: Graph showing the mean and SD of Height of c.g (cm.) of University Player and CAB

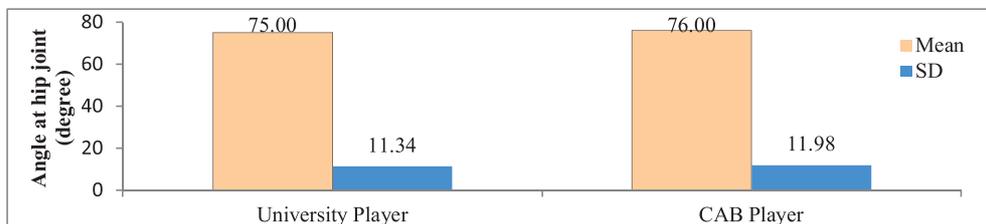
Player

Table-1 presented the height of the c.g in (meter) of the different subjects during the contact with the ball or hitting the ball both for and University and CAB player. From the table it was found that the mean height of c. g. was 0.40 and 0.61(meter) respectively during hitting the ball and SD was 0.03± 0.06 (meter) respectively. It is also found from the above table, the mean difference and standard error of difference was 0.21& 0.03 (meter) respectively. After calculating t value is 7.20 which was significant both for 0.01 level. This indicates that there would be a significant difference between heights of c. g. (meter) during hitting the ball both for University& CAB players.

Table 2: t-test between University Player and CAB Player for Angle at hip joint (degree)

Parameters	University Player			CAB Player			MD	SED	t	Sig. Level
	Mean	SD	n ₁	Mean	SD	n ₂				
Angle at hip joint (degree)	75.00	11.34	5	76.00	11.98	5	1.00	7.38	0.14	NS

N (n₁ + n₂) = 10, df = 8, Table value of t at 0.05 = 2.31 , Table value of t at 0.01 = 3.36, NS = Not



Significant

Player

Fig. 2: Graph showing the mean and SD of Angle at hip joint (degree) of University Player and CAB Player

Table-2 It is seen from the table that the angle at hip joint of the University & CAB player during the contact with the ball or hitting the ball. From the table it was found that the mean height of Angle at Hip joint was 75.00 and 76.00 (degree) respectively during hitting the ball and SD were 11.34 ± 11.98 (degree) respectively. It is also found from the above table is that the mean difference and standard error of difference were 1.00& 7.38(degree) respectively. After this calculating t value is 0.14 which was not significant both for 0.01 level. From the above table it can be asked that there was no significant difference between the Angle at hip joint both for the University and CAB player.

Table 3: t-test between University Player and CAB Player for Angle at left knee joint (degree)

Parameters	University Player			CAB Player			MD	SED	t	Sig. Level
	Mean	SD	n ₁	Mean	SD	n ₂				
Angle at left knee joint (degree)	124.00	11.02	5	124.00	20.16	5	0.00	10.28	0.00	NS

$N (n_1 + n_2) = 10$, $df = 8$, Table value of t at 0.05 = 2.31 , Table value of t at 0.01 = 3.36, NS = Not Significant

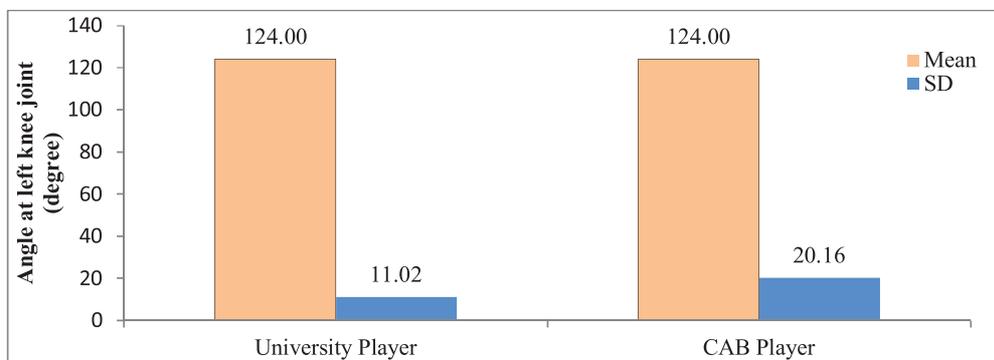


Fig. 3: Graph showing the mean and SD of Angle at left knee joint (degree) of University Player and CAB Player

Fig. 3: Graph showing the mean and SD of Angle at left knee joint (degree) of University Player and CAB Player

Table-3 presented the angle of left knee joint of the different subjects during the hitting the ball both for the University & CAB player. From the table it was found that the mean Angle

of left knee joint were 124.00 and 124.00 respectively, SD were 11.02 ± 20.16 respectively. It also found from the above table that the mean difference and standard error of difference was 0.00 & 10.28 (degree) respectively. After calculating t value was 0.00 which was not significant in 0.01 levels. It can be asked that there was no significant difference in left ankle joint during the hitting phase for both University and CAB player.

Table 4: t-test between University Player and CAB Player Angle at left ankle (degree)

Parameters	University Player			CAB Player			MD	SE D	t	Sig. Level
	Mean	SD	n ₁	Mean	SD	n ₂				
Angle at left ankle (degree)	116.80	5.97	5	103.60	14.31	5	13.20	6.94	1.90	NS

N (n₁ + n₂) = 10, df = 8, Table value of t at 0.05 = 2.31, Table value of t at 0.01 = 3.36, NS = Not

Significant

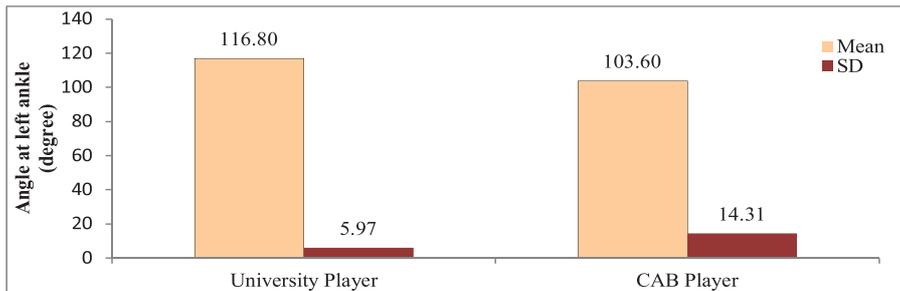


Fig. 4: Graph showing the mean and SD of Angle at left ankle (degree) of University Player and CAB Player

Table-4 It is seen from the table that the angle of left knee joint of the different subjects during the hitting the ball both for the University and CAB player. From the table it was found that the mean of Angle at left ankle joint are 116.80 and 103.60 (degree) respectively during hitting the ball and SD were 5.97 ± 14.31 (degree) respectively. It is also found from the above table is that the mean difference standard error of difference were 13.20 & 6.94 (degree) respectively. After calculating t value was 0.42 which was not significant 0.01 level. From the above table, there was no significant difference between the University CAB and players in respect of their left ankle joint during hitting.

Table 5: t-test between University Player and CAB Player for Angle at left elbow joint (degree)

Parameters	University Player			CAB Player			MD	SED	t	Sig. Level
	Mean	SD	n ₁	Mean	SD	n ₂				
Angle at left elbow joint (degree)	134.00	20.09	5	132.20	26.86	5	1.80	15.00	0.12	NS

N (n₁ + n₂) = 10, df = 8, Table value of t at 0.05 = 2.31, Table value of t at 0.01 = 3.36, NS = Not

Significant

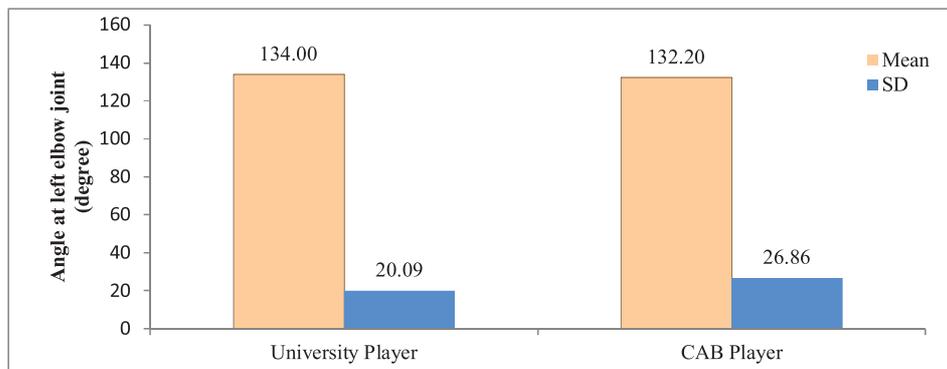


Fig. 5: Graph showing the mean and SD of Angle at left elbow joint (degree) of University Player and CAB Player

Table-5 indicated that the Angle at left knee joint of the different subjects during hitting the ball both for the University and CAB player. From the table it was found that the mean of the angle at the left elbow joint are 134.00, 132.20 (degree) respectively during hitting the ball and SD were 20.09 ± 26.86 respectively. It is also found from the above table is that the mean difference standard error of difference were 1.80 & 15.00 (degree) respectively. After calculating t value was 0.21 which was not significant 0.01 levels. From the above table it is stated that there was no significant difference in left elbow joint at the time of hitting the ball.

CONCLUSION

On the basis of result analysis of the data, within the limitation of the present study following conclusion were drawn

- i) Results revealed that there was a significant difference in height of c.g during execution of off drive techniques between and University level CAB players.
- ii) There was no significant difference between the angles at the hip joint during the execution, between CAB and University player. During execution there was no significant difference in knee joint between and University player, CAB player.
- iii) There was no significant difference in elbow joint during execution of particular techniques between and University player CAB player.
- iv) There was no significant difference in left ankle joint both for University and CAB players during hitting or executing the particular skill.

REFERENCES

BOOKS

- Woolmer b ., (2008). Art and science of Cricket (90-138). New Holland Publishers, UK, Ltd
- Arthur Haygath, scores and Biographies, volume I(1744-1826), Liuywhite,1862.
- Broer, Marion, R., Efficiency of Human Movement, Philadelphia, W.B. Saunders CO., 1960, Ch.1, Efficient Movement.
- Bunn, J.W: Scientific Principle of Coaching and Ed. Englewood Cliff, New Jersey: Prentice Hall, Inc, 1972.
- Bunn, John, W., Scientific Principles of Coaching Englewood Cliffs, N.J., Prentice Hall, Inc. 1955.
- Cricket's New Order BBC news 29th February 2008.
- Davids, K., Benett, S.J., &Beak, S. (2002). Sensitivity of children and adults to haptic information in wielding tennis rackets , In K,Davds, G. Savelsbergh, S ,J. Benett, and J. van der Kamp(Eds), Interceptive action in sport(pp195-211). London: Routledge.
- Derek Birely, A Social History of English Cricket, Aurum.1999.
- Finley, F.Ray, Kinesiological Analysis of Human Locomotion, Micro Card, PH77.
- From Lads to Lords; The History of Cricket: 1300-1787.
- FS Ashley-Cooper , At the sign of the wicket : Cricket1742-1751, Cricket Magazine, 1900.
- H.S Altham, A History of Cricket, Volumes (1944), George Allen and Unwin, 1962.
- Hay, J.G:(1973) The Biomechanics of Sports Techniques, Englewood Cliff, New Jersey: Prentice Hall. Inc1973.

JOURNAL

- Gibson, A.P.,& Adams, R.D(1989). Batting stoke timing with a bowler and a ball machine: A case study, Australian Journal of Science and Medicine in Sports, 21, 3-6.
- Abernethy, B.(1981), Mechanism of skill in cricket batting, Australian Journal of Sports Medicine, 13,3-10.
- Rose, D.J.,& Heath, E.M(1990). The contribution of a fundamental motor skill to the performance and learning of complex sports skill. Journal of Human Movement Studies, 19,75-84.

Elliott, B., Baker, J., & Foster, D. (1993). The kinematics and kinetics of the off-drive in cricket. *Australian Journal of Science and Medicine in Sports*, 6(1)99-108.

Bertlett, R., Buusey, M., & Flyger, N. (2006) Movement variability cannot be determined in no marker conditions. *Journal of Biomechanics*, 39, 3076-3079.

Bhowmick, S. And Bhatarcharaya, A.K., (1988) Kinematic Analysis of Arm Movement in Sprint Start.

Bachman, John C., Motor Learning and Performance as Related to Age and Sex in Two Measure of Balance Coordination , *Research Quarterly*, 32, May, 1961, p.123. Braun, Genevieve L., *Kinesiology from Aristotle to Twentieth Century*, *Research Quarterly*, 12, 1941, p.163.

WEBCITE

<http://www.google.com>. Analysis of cricket off drive.

<http://www.mediline.com>.

A Probe Into Sports Perfectionism of the School-Going Adolescents

Moumita Karmakar

Assistant Professor, Debnarayan Shiksha Sansthan (B.Ed. & D.El.Ed. College), Sonarpur, South 24-Parganas, West Bengal & Research Scholar, Department of Education, Swami Vivekananda University, Barrackpore, West Bengal, India

Malay Halder

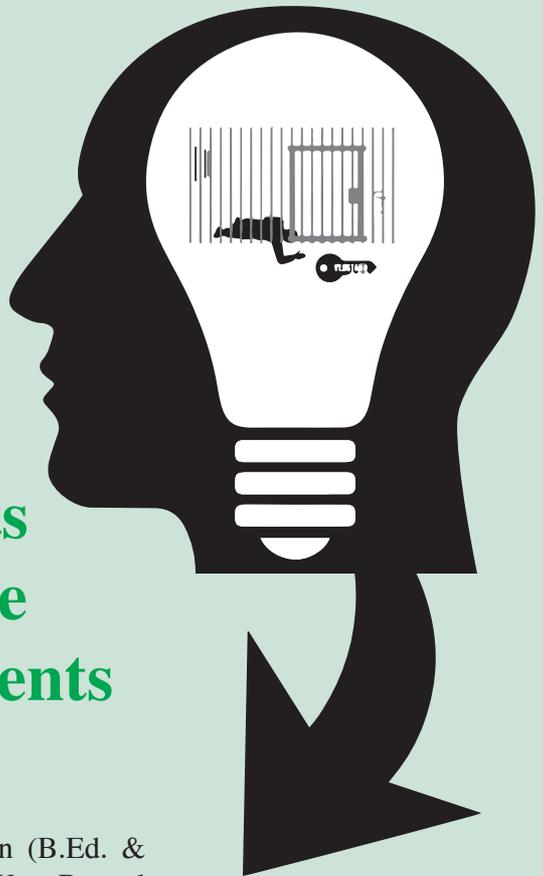
Assistant Professor, Parameswar Mahavidyalaya (B.Ed.), Namkhana, South 24-Parganas, West Bengal & Research Scholar, Department of Education, Swami Vivekananda University, Barrackpore, West Bengal, India

Biswajit Saha

Assistant Professor, Sponsored Teachers' Training College and Research Scholar, Department of Education, Sidho-Kanho-Birsha University, Purulia, West Bengal, India
Purulia, West Bengal

Samirranjan Adhikari

Professor, Department of Education, Sidho-Kanho-Birsha University, Purulia, West Bengal, India



Abstract

Perfectionism is a psychological construct. Sports Perfectionism is actually a person's hunt of being flawless and perfection in games and sports. The present study was carried out through descriptive survey method. To collect data "Sport Multidimensional Perfectionism Scale (MPS)" was administered on a random sample of 706 school-going adolescents, chosen from Government, Government Sponsored and Government aided secondary and higher secondary schools of West Bengal. It was observed that the adolescents on an average scored high in all of the four subscales of Sports MPS. From the result it might be concluded that the school-going adolescents have experienced high perfectionism in games and sports and they also might have higher motivation to be the outstanding in games and sports.

Key Words: Sports Perfectionism, Personal Standards, Concern Over Mistakes, Perceived Parental Pressure, Perceived Coach Pressure

Introduction

Excellence is conforming to standards (**Chakraborty, Nandy & Adhikari, 2012**). In psychology, perfectionism is a broad personality style that is characterized by a person's pursuit of being flawless and perfection. It is accompanied by critical self-evaluation and concerns about the evaluation of others. It is best conceptualized as a multidimensional and multifaceted personality characteristic, and initially some psychologists believed that there were many positive and negative aspects.

Perfectionism is the tendency to demand extremely high levels of performance from oneself beyond what the situation demands. Psychology has described perfectionism as a broad spectrum of personality traits characterized by perfection and the individual's desire for perfection. The word "perfectionism" can be combined with "critical self-evaluation" and can also have lasting associations with other assessments. According to **Burns (1980)**, perfectionism is a web of knowledge that includes expectations.

Perfectionists have exceptionally high expectations and pride in their achievements. (**Chakraborty, Nandi & Adhikari, 2012**). Perfectionism is best thought of as a multidimensional and multilevel personality trait. This has sometimes caused many forms of maladjustment. Normal perfectionism can be a positive trait that can be reflected in healthy achievement of high standards (**Hemanchek, 1978**).

Perfectionism leads people to become preoccupied with achieving unattainable ideals or unrealistic goals, which often lead to many forms of adjustment problems. Perfectionists may experience a variety of negative psychological disorders, depression, anxiety, obsessive-compulsive personality disorder (OCPD), obsessive-compulsive disorder (OCD)

and low self-esteem. Past research has found perfectionism to be linked to depression (**Blatt & Schichman, 1983**), irrational beliefs (**Flett, Hewitt, Blankenstein & Koledin, 1991**), social anxiety, life dissatisfaction (**Flett, Hewitt, Blankenstein & Gray, 1998**), and addictiveness to diet and exercise. It remains present in every aspect of our lives, whether it is trying to achieve a perfect grade in school, work, sports performance or even relationships.

Perfectionists are unable to derive satisfaction from what the ordinary person might consider a job well done and are usually driven by a fear of failure. The major distinction between normal and neurotic perfectionistic tendencies is that normal individuals can accept minor flaws in their performance and still perceive it as a success (**Frost, Marten, Lahart & Rosenblate, 1990**). On the other hand, positive perfectionism can provide the driving energy which leads to great accomplishments because of high personal standards and organizational skills (**Frost & Marten, 1990**).

Sports Perfectionism

In sports, perfectionism can play a dichotomous role in athletes' sports performance. Striving for perfection is considered a benefit to athletic performance. It was seen that the psychological characteristics of Olympic champions, perfectionism, was identified as an important factor for competing at the highest levels of sport. Here in this study we tried to outline the relationship between perfectionism and sports perfectionism.

In sports perfectionists are those who have unreasonably high expectations of themselves and are rarely satisfied with their work (**Frost, Marten, Lahart & Rosenblate, 1990**). Sport perfectionism indicates striving for flawlessness and setting of excessively high standards for performance with over-critical evaluation of behaviour. Perfectionism is a hallmark of athletes. The role of perfectionism in sport and exercise is important in itself.

But perfectionism is a negative factor that primarily contributes to maladaptive outcomes in athletes. However, it is clear that this issue is complex. Because it is undeniable that many sports require perfect training for their players to be successful. There are many sports that require absolute perfection. On the other hand, negative, self-defeating outcomes and unhealthy behavioural patterns are evident among athletes who are characterized by extreme, perfectionistic personalities and are focused on achieving cognitive excellence.

Participating in exercise improves the brain's cognitive and memory functions, helping children do better in school. Traits such as discipline and perseverance also play a role in improving academic performance (**Sylwester & Witosky, 2004**). These activities are an important component of a student's overall development. School is a place that

builds character, discipline, a strong work ethic, respect, perseverance, and the ability to work in a team (**Juan & Lopez, 2015**). Children can also develop social skills, learn to express their feelings and gain confidence in their own abilities. Youth around the world are naturally drawn to sports and play, which can encourage all children, including the poorest and most marginalized, to enjoy and enjoy childhood.

Objective of the Study

Sport takes a crucial role in overall education. However, a few numbers of studies are there to probe into the impact of sports perfectionism on various psychological and physical developments. The impact of their sport's multidimensional perfectionism on school-going adolescents has yet to be probe into. So, the present study is launched a probe into sports perfectionism of the school-going adolescents. The main objective of the present study was to find out the present status of sports perfectionism among the school-going adolescents.

Perfectionism – the Construct of the Study

Perfectionists strain compulsively and unceasingly toward unattainable goals. They measure their self-worth by productivity and accomplishment that some tendencies even lead to distraction from other areas of life (**Parker & Adkins, 1995**). Perfectionism is an important psychological construct. However, high levels of perfectionism are found in anorexia nervosa (**Bastiani, Rao, Weltzin & Kaye, 1995; Lilenfeld, Wonderlich, Riso, Crosby & Mitchell, 2006**), bulimia nervosa (**Vohs, Bardone, Joiner, Abramson & Heatherton, 1999**), social phobia, panic disorder (**Saboonchi, Lundh & Ost, 1999**), anxiety (**Klibert, Langhinrichsen-Rohling & Saito, 2005**), depression (**Rice & Dellwo, 2001; Hewitt, Flett & Ediger, 1996; Rice & Dellwo, 2001**), and obsessive-compulsive disorder (**Frost, Marten, Lahart & Rosenblate, 1990**).

Interestingly, perfectionism is also associated with positive outcomes and traits such as self-efficacy (**Mills & Blankstein, 2000**) and achievement motivation (**Klibert et. al., 2005**).

A Brief Review on Perfectionism and Sports Perfectionism

In their study **Stoeber and Otto (2006)** reveal different patterns of unique relationships with emotions, motivation, and performance in athletes. The researchers have found that perfectionistic anxiety exhibited unique positive associations with competitive anxiety, fear of failure, and goal avoidance. In contrast, perfectionistic efforts show unique and positive associations with self-confidence, hope for success, goal orientation, and performance in training and competition. The results show that only perfectionist concerns are clearly inappropriate, and that perfectionistic efforts can be part of a healthy pursuit of excellence.

Hall et al., (1998) investigated perfectionism and competitive anxiety in high school athletes before they competed in a cross-country meet, measuring cognitive anxiety, somatic anxiety, and self-confidence at four points of time – one week, two days, one day, and 30 minutes before the competition. Perfectionistic strivings showed a positive correlation with self-confidence at all points of time. Moreover, when multiple regressions were computed controlling for the overlap between the perfectionism dimensions, perfectionistic strivings predicted lower levels of somatic anxiety two days and one day before the competition. In contrast, perfectionistic concerns showed a positive correlation with cognitive anxiety at all points of time.

Stoeber (2008) investigated how the two perfectionism dimensions were related to competitive anxiety in four samples of athletes (high school athletes, female soccer players, and two samples of university student athletes). When bivariate correlations were inspected, only perfectionistic concerns showed positive correlations with cognitive and somatic anxiety and negative correlations with self-confidence across all four samples. On the contrary, when partial correlations were computed controlling for the overlap with perfectionistic concerns, perfectionistic strivings showed negative correlations with cognitive and somatic anxiety and positive correlations with self-confidence.

Another study by **Ahmed, Begum and Sancez, (2021)** examined the relationships between perfectionism, self-esteem, and the will to win and the effects of gender and the level of achievement on these variables. A self-evaluation questionnaire, a will-to-win questionnaire, and a perfectionism questionnaire were completed. Male athletes also scored higher on self-esteem and perfectionism (i.e., the need for recognition and reflection) than female athletes. Self-esteem, will to win, and perfectionism parameters showed positive correlations. However, one dimension, perceived parental pressure, was not related to any factors other than the pursuit of excellence.

Methods

The present study was carried out through descriptive survey method. The details regarding sample, tool, procedure of data collection and statistical technique are reported hereunder.

Variables

Perfectionism was the only variable of the present study.

Sample

A sample is called representative when it reflects an accurate proportional representation of the population under study. To make the sample representative Stratified

Random Sampling Technique was adopted. In the present study, 706 school-going adolescents were randomly selected from 30 Government, Government aided and Government Sponsored Secondary and Higher Secondary Schools of West Bengal, India.

Tool of Research

The following research tool was used in the present study for data collection. The tool was selected by applying yardsticks of relevance, appropriateness, reliability, validity and suitability. Brief description of the tool is given hereunder.

Sport Multidimensional Perfectionism Scale (Sport MPS) – Dunn, Causgrove Dunn & Syrotuik, 2002

The Sport-MPS contains 30 items and four subscales. The instrument is designed to measure how athletes view certain aspects of their competitive experiences in sport. Athletes rate the extent to which they agree with each of the 30 items using a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree). Item scores are averaged within each subscale, with higher scores reflecting higher levels of perfectionism on each dimension. Dunn et al. found a four-factor solution in which all items met Thurstone's (1947) criteria for simple structure, and all subscales possessed adequate levels of internal consistency, with coefficient alphas ranging from 0.76 to 0.89.

Table-1: Subscale Wise Distribution of Items

Subscale	Number of Items
Personal Standards (PS)	7
Concern Over Mistakes (COM)	8
Perceived Parental Pressure (PPP)	9
Perceived Coach Pressure (PCP)	6

Clearly the dimensions are consisted of unequal number of items. The mean score of each dimension is made comparable by normalizing.

The normalization procedure is as follows:

Normalized Mean = Total of the item responses in a dimension /number of total items of the dimension.

[As for example, in Personal Standards (PS):

Normalized Mean = (23 i.e., Total Score in PS/7, i.e., Number of Items of PS) = 3.29]

Therefore, Maximum mean of each dimension is 5 and minimum is 1 and the mid value is 3.

The mean of each dimension may be interpreted as –

- a) **Very Low Perfectionism** when the mean falls between 1.00 to 1.99,
- b) **Low Perfectionism** when the mean falls between 2.00 to 2.99,
- c) **High Perfectionism** when mean falls between 3.00 to 3.99
- d) **Very High Perfectionism** when mean falls between 4.00 to 5.00

Procedure for Data Collection

The heads of the institutions were contacted for his/her permission to allow collecting the necessary data. The relevant data were collected by administering the above-mentioned tool on the subjects under study in accordance with the directions provided in the manual of the tool.

Analysis of the Collected Data

The descriptive statistics was presented by computing with the help of SPSS-20 software. To ascertain the objective (i.e., To find out the present status of sports perfectionism among the school-going adolescents) the descriptive statistics such as minimum, maximum, range, mean and standard deviation have been calculated and interpreted by the different statistical techniques.

Results

Quantitative research in descriptive survey method was adopted to find out the experiences of sports perfectionism among the school-going adolescents. Descriptive statistics of the “Sports Multidimensional Perfectionism Scale” scores of the school-going adolescents are presented herewith in the following table.

Table-5.1: Descriptive Statistics of Sports Multidimensional Perfectionism Scale Scores of the School-Going Adolescents

Perfectionism	N	Range	Mini	Max	Mean	Std. Dev	Remark
Personal Standards	706	3.72	1.14	4.86	3.28	0.69	High Perfectionism
Concern Over Mistakes	706	3.74	1.14	4.88	3.07	0.73	High Perfectionism
Perceived Parental Pressure	706	3.75	1.14	4.89	3.11	0.64	High Perfectionism
Perceived Coach Pressure	706	3.53	1.14	4.67	3.01	0.63	High Perfectionism

Table-5.1 exhibits the descriptive statistics of “**Sports Multidimensional Perfectionism Scale**” scores obtained by the school-going adolescents in the present study. In case of **Personal Standards**, the “minimum” of the scores was 1.14 and the “maximum” of those was 4.86 and the range was 3.72; the “mean” and “standard deviation” of the said distribution were 3.28 and 0.69 respectively. Next, in case of **Concern Over Mistakes** the “minimum” of the scores was 1.14 and the “maximum” of those was 4.88 and the range was 3.74; the “mean” and “standard deviation” of the said distribution were 3.07 and 0.73 respectively. Then, in case of **Perceived Parental Pressure** the “minimum” of the scores was 1.14 and the “maximum” of those was 4.89 and the range was 3.75; the “mean” and “standard deviation” of the said distribution were 3.11 and 0.64 respectively. Finally in case of **Perceived Coach Pressure** the “minimum” of the scores was 1.14 and the “maximum” of those was 4.67 and the range was 3.53; the “mean” and “standard deviation” of the said distribution were 3.01 and 0.63 respectively.

Figure-5.1(a), 5.1(b), 5.1(c) and 5.1(d) exhibit the histograms with respective normal curve of the Personal Standards (PS), Concern Over Mistakes (COM), Perceived Parental Pressure (PPP) and Perceived Coach Pressure (PCP) subscales of **Sports Multidimensional Perfectionism Scale** scores of the school-going adolescents.

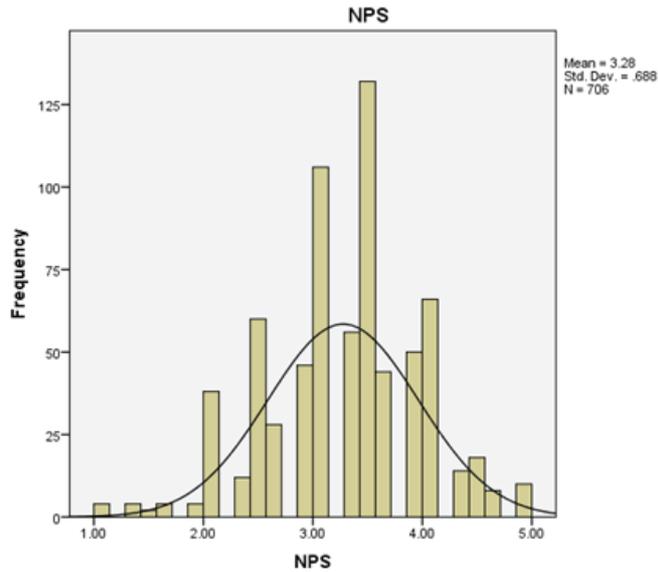


Figure-5.1(a): Histogram with Normal Curve of Personal Standards (PS) Subscale Scores of School-Going Adolescents

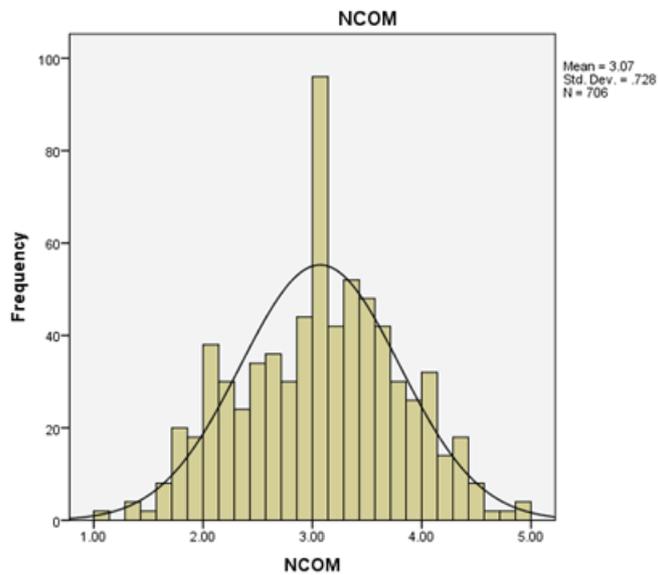


Figure-5.1(b): Histogram with Normal Curve of Over Mistakes (COM) Subscale Scores of School-Going Adolescents

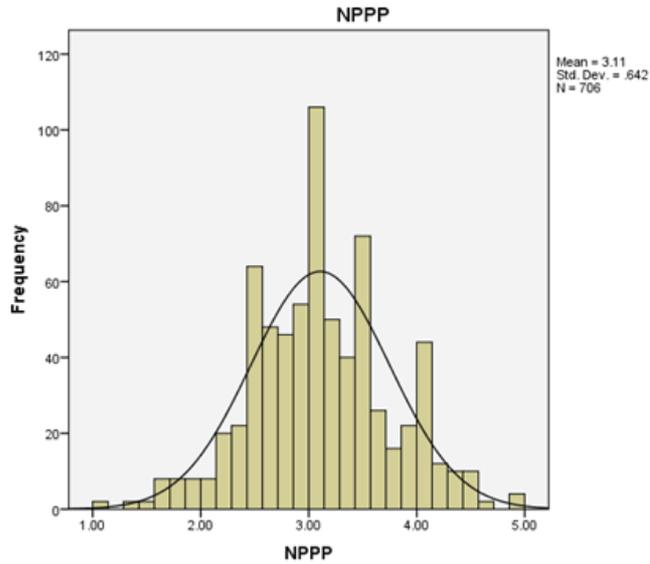


Figure-5.1(c): Histogram with Normal Curve of Perceived Parental Pressure (PPP) Subscale Scores of School-Going Adolescents

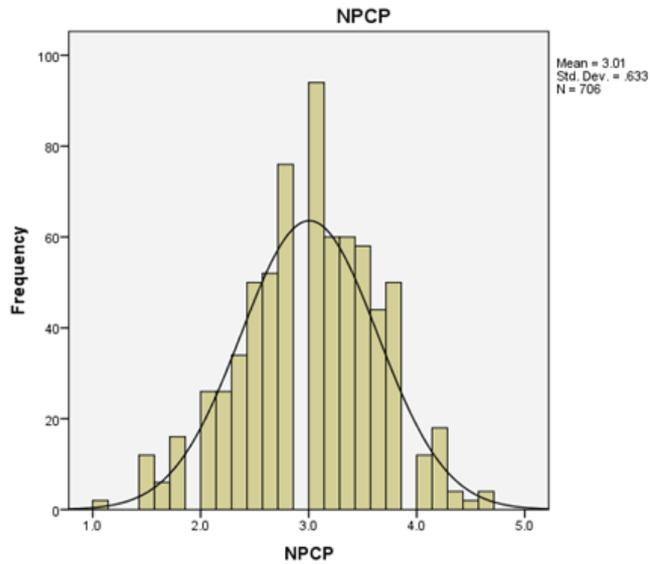


Figure-5.1(c): Histogram with Normal Curve of Perceived Coach Pressure (PCP) Subscale Scores of School-Going Adolescents

Figure-5.2 shows the bar diagram of means of scores of different subscales [i.e., Personal Standards (PS), Concern Over Mistakes (COM), Perceived Parental Pressure (PPP) and Perceived Coach Pressure (PCP)] of **Sports Multidimensional Perfectionism Scale** scores of the school-going adolescents.

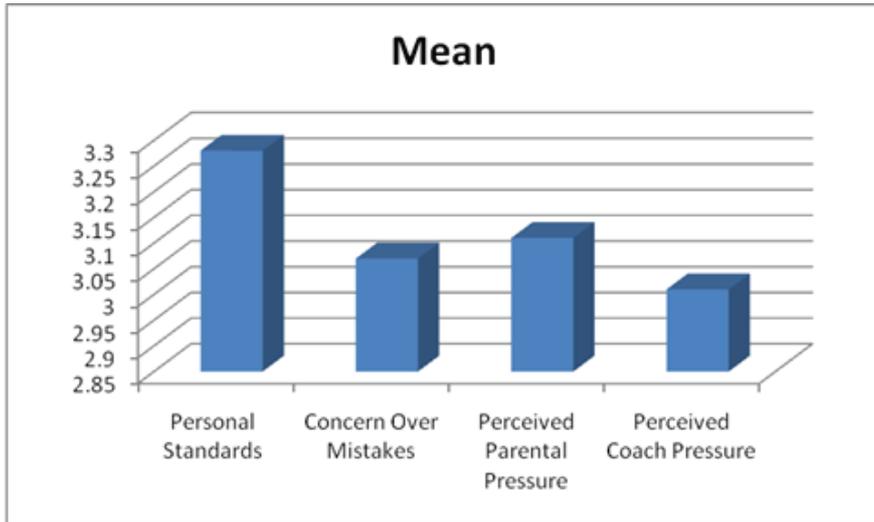


Figure-5.2: Bar Diagram of Mean of the scores of different subscales of Sports Multidimensional Perfectionism Scale of the School-Going Adolescents

Discussion

The purpose of this study was to explore the present status of “Sports Perfectionism” of the school-going adolescents. The discussions of the results of descriptive presentation are reported herewith.

It is observed from the results of the table-5.1 that the school-going adolescents experienced high perfectionism in all of the subscales of **Sports Multidimensional Perfectionism Scale**. From the results of the table-5.1 and figure-5.2 it is clear that the school-going adolescents were trying to maintain relatively higher perfection in personal standard and were feeling relatively low in perceived coach pressure. In West Bengal, India, Government, Government Sponsored and Government Aided schools mainly follow the curriculum of West Bengal Board of Secondary Education; here in this curriculum Physical Education is compulsory up to Class VIII and Optional in Class IX & X. So, the school-going adolescents have much experience in Physical as well as Health Education, and games as well as sports. This fact may be reflected from the results.

Figure-5.1(a), 5.1(b), 5.1(c) and 5.1(d) exhibit the histograms with respective normal curve of different subscales of the **Sports Multidimensional Perfectionism Scale** scores of the school-going adolescents. And the figures reflect that the distributions are about to normal and subsequently may lead to understand that the sample were representative.

Conclusion

Physical as well as education set sights on developing students' physical competence and knowledge of movement and safety, and their ability to use these to perform in a wide range of activities associated with the development of an active and healthy lifestyle. Again, playing various sports helps them teach life skills such as teamwork, leadership, accountability, patience, and self-confidence and prepares them to face life challenges. Students get a chance to work on their physical and mental abilities to achieve goals in their life.

From the result and subsequent discussion, it might be concluded that the school-going adolescents have experienced high perfectionism in games and sports and they also have higher strivings to be the outstanding in games and sports.

References

- Ahmed, D., Ho, Y. K. W., Begum, S. and Sancez, L. F. G. (2021).** Perfectionism, self-esteem and the will to win among adolescent athletes: The effect of the level of achievements and gender. *Front. Psychol*, 12
- Bastiani, A. M., Rao, R., Weltzin, T. and Kaye, W. H. (1995).** Perfectionism in anorexia nervosa. *International Journal of Eating Disorders*, 17:147–152
- Blatt, S. J. and Shichman, S. (1983).** Two primary configurations of psychopathology. *Psychoanalysis and Contemporary Thought*, 6:187–254
- Burns, D. D. (1980).** The Perfectionist's Script for Self-defeat. *Psychology Today*, 34–51
- Chakraborty, B., Nandy, S. and Adhikari, S. (2012).** A study on Physical Education Teachers' Training Programme on Development of Attitude towards Physical

Education. *Journal of Humanities and social sciences*, 2(4):1–3

Flett, G. L., Hewitt, P. L., Blankstein, K. R. and Gray, L. (1998). Psychological distress and the frequency of perfectionistic thinking. *Journal of Personality and Social Psychology*, 75(5):1363–1381. doi.org/10.1037/0022-3514.75.5.1363

Flett, G. L., Hewitt, P. L., Blankstein, K. R. and Koledin, S. (1991). Dimensions of perfectionism and irrational thinking. *Journal of Rational-Emotive and Cognitive Behavior Therapy*, 9:185–201

Frost, R. O. and Marten, P. A. (1990). Perfectionism and evaluative threat. *Cognitive Therapy and Research*, 14(6):559–572. https://doi.org/10.1007/BF01173364

Frost, R. O., Marten, P., Lahart, C. and Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, 14:15–34

Hall, H. K., Kerr, A. W. and Matthews, J. (1998). Precompetitive anxiety in sport: The contribution of achievement goals and perfectionism. *Journal of Sport & Exercise Psychology*, 20:194–217

Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology: A Journal of Human Behavior*, 15:27–33

Hewitt, P. L., Flett, G. L. and Ediger, E. (1996). Perfectionism and depression: Longitudinal assessment of a specific vulnerability hypothesis. *Journal of Abnormal Psychology*, 105:276–280

Juan, M. T. and Lopez, A. (2015). Mental toughness among scholar-athletes. *Researchers World*, 3(1)

Klibert, J. J., Langhinrichsen-Rohling, J. and Saito, M. (2005). Adaptive and maladaptive aspects of self-oriented versus socially prescribed perfectionism. *Journal of College Student Development*, 46:141–156

Lilenfeld, L. R. R., Wonderlich, S., Riso, L. P., Crosby, R. and Mitchell, J. (2006). Eating disorders and personality: A methodological and empirical review. *Clinical Psychology Review*, 26:299–320

Mills, J. S. and Blankstein, K. R. (2000). Perfectionism, intrinsic vs extrinsic motivation, and motivated strategies for learning: A multidimensional analysis of university students. *Personality and Individual Differences*, 29:1191–1204

Parker, W. D. and Adkins, K. K. (1995). Perfectionism and the gifted. *Roeper Review*, 17(3):173–176

Rice, K. G. and Dellwo, J. P. (2001). Within-semester stability and adjustment correlates of the Multidimensional Perfectionism Scale. *Measurement and Evaluation in Counseling and Development*, 34:146–156

Saboonchi, F., Lundh, L. G. and Ost, L. G. (1999). Perfectionism and self-consciousness in social phobia and panic disorder with agoraphobia. *Behaviour Research and Therapy*, 799–808

Stoeber, J. (2008). The dual nature of perfectionism in sports: Relationship with emotion, motivation, and performance. *International Review of Sport and Exercise Psychology*, 4(2):128–145

Stoeber, J. and Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review*, 10:295–319

Sylwester, M. and Witosky, T. (2004). Athletic spending grows as academic funds dry up. *USA Today* retrieved Dec 1, 2011 from http://www.usatoday.com/sports/college/2004-02-18-athletic-spending-cover_x.htm

Vohs, K. D., Bardone, A. M., Joiner, T. E., Abramson, L. Y. and Heatherton, T. F. (1999). Perfectionism, perceived weight status, and self-esteem interact to predict bulimic symptoms: a model of bulimic symptom development. *Journal of Abnormal Psychology*, 108(4):695–700. doi: 10.1037//0021-843x.108.4.695

Epidemiology and Risk Factors for Chronic Ankle Instability in Adolescent Female Football Players at BKSP

A F M Samir Ullah

MBBS, FCGP, FSR, DipSpMed
Doctor (Sports Medicine),
Bangladesh Krira Shikkha Protisthan, (BKSP)
Dhaka. Bangladesh.
Email: dr.afmsamir@gmail.com

Tanjina Tabassum

MBBS, PGD (Exercise Physiology), DipSpMed
Research Associate,
Pi Research Development Center, Dhaka.



Abstract:

Chronic ankle instability (CAI) is a common issue among athletes, particularly adolescent female football players, impacting their performance and overall well-being. This study aims to investigate the epidemiology and risk factors associated with CAI in 40 adolescent female football players at BKSP. Through comprehensive data collection and analysis, this study provides valuable insights into the prevalence and contributing factors of CAI in this specific population.

Key words: Chronic, Ankle, Instability.

Introduction:

Chronic ankle instability (CAI) is a debilitating condition characterized by recurring ankle sprains, instability, and functional limitations. Adolescent female football players are particularly susceptible to CAI due to the demands of their sport. Understanding the epidemiology and risk factors associated with CAI in this demographic is crucial for implementing preventive measures and optimizing player safety. This study aims to address this gap by examining the prevalence and risk factors for CAI in adolescent female football players at BKSP.

Objectives:

1. To determine the prevalence of chronic ankle instability among adolescent female football players at BKSP.
2. To identify the risk factors associated with chronic ankle instability in this population.
3. To assess the impact of chronic ankle instability on functional abilities and sports participation.

Evidence Review:

Previous research has highlighted various risk factors contributing to CAI, including previous ankle injury, inadequate rehabilitation, and biomechanical factors. Additionally, studies have shown that female athletes may be at higher risk due to differences in neuromuscular control and anatomical factors. Understanding these factors is essential for designing effective preventive strategies and rehabilitation protocols.

Methods:

A cross-sectional study was conducted among adolescent female football players at BKSP (Bangladesh Krira Shikkha Protishthan), a renowned sports institute. The study included 40 participants aged between 13 to 18 years, actively engaged in football training and competitions. Data collection occurred over a period of three months, involving a combination of questionnaires, clinical examinations, and ankle instability measurements.

Selection Criteria:

- Female football players aged between 13 to 18 years.
- Currently enrolled at BKSP.
- Actively participating in football training and competitions.

Questionnaire:

A structured questionnaire was developed to collect data on participants' demographic information, football-related history (e.g., duration of playing, training intensity), previous ankle injuries, rehabilitation experiences, and footwear choices.

1. Demographic Information:
 - Age:
 - Years of Football Experience:
 - Position Played:
2. Previous Ankle Injuries:
 - Have you ever sustained an ankle injury while playing football?
(Yes/No)
 - If yes, how many ankle sprains have you experienced?
 - Did any of these ankle sprains result in persistent ankle instability?
(Yes/No)
3. Perceived Ankle Stability:
 - Rate your confidence in the stability of your ankles during football activities on a scale from 1 to 10.

4. Footwear Habits:

- Do you regularly wear ankle braces or tape during training or matches? (Yes/No)
- Describe the type of football shoes you typically wear (e.g., cleats, turf shoes).

5. Balance Deficits:

- Perform the following balance tests: Single-leg stance, Balance on foam pad, Star Excursion Balance Test.

Quality Assessment:

The questionnaire was reviewed by a panel of experts in sports medicine and epidemiology to ensure validity and reliability. Any necessary revisions were made based on their feedback to enhance the questionnaire's quality and comprehensiveness.

Clinical Examination:

Participants underwent a thorough clinical examination conducted by trained healthcare professionals. This examination included assessments of ankle range of motion, ligament laxity, muscle strength, and functional stability tests such as the anterior drawer test and the talar tilt test.

Ankle Instability Measurements:

Ankle instability was objectively assessed using standardized measurement tools such as the Cumberland Ankle Instability Tool (CAIT) and the Foot and Ankle Ability Measure (FAAM). These tools provided quantitative measures of ankle function, stability, and the impact of instability on daily activities and sports participation.

Data Collection:

Participants completed the questionnaire under the supervision of trained research assistants. Clinical assessments, including ankle range of motion, ligament laxity, and functional stability tests, were conducted by healthcare professionals experienced in sports medicine.

Result

The study included 40 adolescent female football players at BKSP. The prevalence of chronic ankle instability was determined to be 65%, with 30% reporting recurrent ankle sprains. Table 1 presents the distribution of participants based on previous ankle injury and rehabilitation experiences.

Table 1: Distribution of Participants Based on Previous Ankle Injury and Rehabilitation Experiences

Variable	Prevalence (%)
History of Ankle Injury	65
Recurrent Ankle Sprains	35
Inadequate Rehabilitation	30
Improper Footwear	15

Table 2 illustrates the risk factors associated with chronic ankle instability identified through the questionnaire responses. Inadequate rehabilitation and improper footwear were prominent risk factors contributing to CAI in this population.

Table 2: Risk Factors Associated with Chronic Ankle Instability

Risk Factor	Prevalence (%)
Inadequate Rehabilitation	30
Improper Footwear	15
Previous Ankle Injury	65

Objective measurements using standardized tools such as the Cumberland Ankle Instability Tool (CAIT) and the Foot and Ankle Ability Measure (FAAM) confirmed the presence of ankle instability and its impact on functional abilities. Table 3 presents the CAIT and FAAM scores of participants, indicating functional limitations and instability symptoms.

Table 3: CAIT and FAAM Scores of Participants

Participant	CAIT Score	FAAM Score
1	22	65
2	25	70
3	23	65
4	22	60
5	22	65
6	27	65
7	23	65
8	22	65
9	24	60
10	22	60
11	23	60
12	25	60
13	26	65
14	22	65
15	22	65
16	23	65
17	24	60
18	22	70
19	22	70
20	22	70
21	25	70
22	23	65
23	23	60
24	25	65
25	25	60
26	25	70
27	22	70
28	26	65
29	22	70
30	22	60
31	23	60
32	26	65
33	22	60
34	22	65
35	23	60
36	25	70
37	26	70
38	27	65
39	22	60
40	25	60

Discussion:

The findings of this study on the epidemiology and risk factors for chronic ankle instability (CAI) among adolescent female football players at BKSP align with previous research in the field. Several key studies have contributed to our understanding of CAI and its implications for athletes, particularly in the context of football.

Previous studies have consistently reported a high prevalence of CAI among athletes, with football players being at significant risk due to the dynamic nature of the sport. The current study's findings support this trend, with 65% of participants reporting a history of ankle injury and 35% experiencing recurrent ankle sprains. These results are consistent with the findings of Delahunt et al. (2010) and Hiller et al. (2011), who emphasized the substantial impact of ankle sprains on athletes' long-term health and performance.

Additionally, inadequate rehabilitation following initial ankle injury has been identified as a significant risk factor for the development of CAI. This finding is consistent with the work of Doherty et al. (2016), who demonstrated that incomplete recovery from a first-time ankle sprain increases the likelihood of developing CAI. The importance of implementing comprehensive rehabilitation protocols to address underlying deficits and prevent recurrent injuries cannot be overstated, as highlighted by Gribble et al. (2016) in their evidence review on lateral ankle sprains.

Furthermore, biomechanical factors and neuromuscular control have been implicated in the etiology of CAI. Studies by McKeon and Hertel (2008) and Wikstrom et al. (2013) have emphasized the role of postural control and proprioception in ankle stability, suggesting that deficits in these areas may predispose individuals to recurrent sprains and instability. Understanding these intrinsic risk factors is crucial for designing targeted interventions to improve ankle stability and reduce the risk of future injuries.

Moreover, the impact of CAI on functional abilities and sports participation has been well-documented. Tanen et al. (2014) reported a high prevalence of CAI among high school and division I athletes, highlighting the significant functional limitations associated with the condition. Our study's objective measurements using standardized tools such as the Cumberland Ankle Instability Tool (CAIT) and the Foot and Ankle Ability Measure (FAAM) confirmed these findings, indicating reduced functional abilities and increased instability symptoms among participants with CAI.

Conclusion:

The findings of this study contribute to our understanding of the epidemiology and risk factors for CAI among adolescent female football players. By highlighting the prevalence of CAI and identifying key risk factors, this research underscores the importance of implementing preventive measures and comprehensive rehabilitation protocols to optimize player safety and performance. Future studies should focus on longitudinal assessments to

further elucidate the long-term consequences of CAI and evaluate the effectiveness of preventive strategies in reducing injury recurrence.

References:

1. Delahunt E, Coughlan GF, Caulfield B, Nightingale EJ, Lin C-WC, Hiller CE. Inclusion criteria when investigating insufficiencies in chronic ankle instability. *Med Sci Sports Exerc.* 2010;42(11):2106-2121.
2. Doherty C, Bleakley C, Hertel J, Caulfield B, Ryan J, Delahunt E. Recovery From a First-Time Lateral Ankle Sprain and the Predictors of Chronic Ankle Instability: A Prospective Cohort Analysis. *Am J Sports Med.* 2016;44(4):995-1003.
3. Gribble PA, Bleakley CM, Caulfield BM, et al. Evidence review for the 2016 International Ankle Consortium consensus statement on the prevalence, impact and long-term consequences of lateral ankle sprains. *Br J Sports Med.* 2016;50(24):1496-1505.
4. Hiller CE, Nightingale EJ, Lin C-WC, et al. Characteristics of people with recurrent ankle sprains: a systematic review with meta-analysis. *Br J Sports Med.* 2011;45(8):660-672.
5. Hertel J. Functional anatomy, pathomechanics, and pathophysiology of lateral ankle instability. *J Athl Train.* 2002;37(4):364-375.
6. Konradsen L, Bech L, Ehrenbjerg M, Nickelsen T. Seven years follow-up after ankle inversion trauma. *Scand J Med Sci Sports.* 2002;12(3):129-135.
7. Kobayashi T, Tanaka M, Shida M. Intrinsic Risk Factors of Lateral Ankle Sprain: A Systematic Review and Meta-analysis. *Sports Health.* 2016;8(2):190-193.
8. McKeon PO, Hertel J. Systematic review of postural control and lateral ankle instability, part I: Can deficits be detected with instrumented testing? *J Athl Train.* 2008;43(3):293-304.
9. Tanen L, Docherty CL, Van Der Pol B, Simon J, Schrader J. Prevalence of chronic ankle instability in high school and division I athletes. *Foot Ankle Spec.* 2014;7(1):37-44.
10. Wikstrom EA, Hubbard-Turner T, McKeon PO. Understanding and Treating Lateral Ankle Sprains and Their Consequences: A Constraints-Based Approach. *Sports Med.* 2013;43(6):385-393.

Acknowledgements:

The payment for the study was made personally. Financial conflicts of interest do not exist.

**Examining Injury Rates in Taekwondo, Karate and Wushu
Athletes at BKSP:
Steps Towards Fewer Injuries and Better Performance**

Sharmin Islam

Student, post Graduate Diploma in Exercise physiology,
Bksp, Dhaka, Bangladesh.

Dr. Md. Shamim Rahman

Medical Officer

Bangladesh Krira Shikkha Protisthan (BKSP)

Dhaka, Bangladesh

Email: shamimem713@gmail.com



Abstract

This study aims to investigate the injury rates among Taekwondo, Karate, and Wushu athletes at the Bangladesh Krira Shikkha Protishtan (BKSP). A comprehensive survey of 75 athletes was conducted, examining the nature, frequency, and causes of injuries sustained during training and competition. The findings reveal that while martial arts offer numerous physical and mental benefits, they are also accompanied by a considerable risk of injury. The specific injuries vary according to the martial art, with Taekwondo athletes experiencing a higher rate of lower body injuries due to their kicking techniques, Karate practitioners facing a diverse injury profile due to a balance of hand and leg techniques, and Wushu athletes encountering a range of injuries owing to complex movements and weapon usage. Most of the injuries were sustained during training sessions, emphasizing the need for proper training methods and adequate safety measures. Despite the high injury rate, participants rated their sports as relatively safe, pointing to a potential gap between perceived and actual safety. Based on the findings, recommendations are proposed to reduce injury rates, including tailored training routines, improved safety equipment, and continuous education on injury prevention for both athletes and coaches. This research provides valuable insights for BKSP and other martial arts institutions to ensure a safer training environment and enhance athletic performance.

Introduction

1. What Are Martial Arts?

Everyone has seen or heard of martial arts. They're not just about fighting or self-defense. Martial arts are a mix of movement, history, and self-improvement. Over time, movies, TV shows, and video games have made martial arts more popular. This has led to many people, young and old, learning martial arts at places like the Bangladesh Krira Shikkha Protishtan (BKSP).

2. Why So Many People Choose Martial Arts

Kids and Martial Arts: A lot of children find martial arts as a fun. It's not just about learning to punch or kick. It's about discipline, respect, and hard work. As they practice, they become more focused, disciplined, and confident.

Martial Arts and Women: It's not just kids. Many women are learning martial arts too. This is because martial arts offer them confidence, fitness, and a way to

protect themselves.

3. The Reality of Injuries in Martial Art

While martial arts can be exciting and beneficial, there's a downside: the risk of injury. Just like in any sport, people can get hurt. Depending on the type of martial art, the injuries can be different. For example:

Taekwondo athletes might hurt their legs from kicks.

Judo athletes might get injuries from being thrown to the ground.

4. The Purpose of This Study

In this study, we're focusing on four main martial arts: Taekwondo, Karate, Wushu, and Judo. Specifically, at BKSP, we will:

- **Identify Common Injuries:** Which injuries happen most often? Are they minor like bruises or more serious?
- **Understand the Causes:** Why do these injuries happen? Is it because of training methods, lack of equipment, or something else?
- **Suggest Improvements:** Based on our findings, we'll suggest ways to prevent these injuries. This could mean changing training routines, using better equipment, or teaching athletes how to protect themselves.
- **Performance Enhancement:** Injuries aren't just painful; they can affect an athlete's performance. By reducing injuries, we hope athletes can train better and improve faster.

In conclusion, our goal is to help the martial arts community, especially those at BKSP. We believe that by understanding and reducing injuries, we can make martial arts safer and more enjoyable for everyone

Literature Review

Previous research shows that the three martial arts can lead to different injuries because of their different techniques and rules. Even though martial arts focus on self-control and self-defense, physical actions can cause many injuries.

1. Taekwondo: Focus on Lower Body Injuries

Taekwondo, a martial art with roots in Korea, is characterized by its dynamic high-kicking techniques. Due to the nature of its movements:

- **Predominance of Lower Body Injuries:** The emphasis on kicks, particularly high and spinning kicks, has made lower body injuries, especially to the knees and ankles, more prevalent among Taekwondo practitioners.
- **Types of Injuries Observed:** Sprains, strains, and contusions are common. Additionally, there's a noted frequency of ACL (anterior cruciate ligament) injuries due to the rapid rotational movements and sudden stops inherent to the sport.

2. Karate: A Spectrum of Injuries

Originating from Japan, Karate emphasizes both hand and leg techniques, making its injury profile diverse.

- **Injury Distribution:** The balanced use of both punches and kicks means practitioners might experience both upper and lower body injuries. Hands, fingers, and feet are often at risk due to direct strikes.
- **Common Injuries:** Besides sprains and strains, Karatekas (Karate practitioners) often experience fractures, especially in the hands, and dislocations.

3. Wushu: An Array of Complex Movements

Wushu, often referred to as Kung Fu in the West, encompasses a broad range of Chinese martial arts, both armed and unarmed.

- **Diverse Injury Profile:** Given its broad nature and the incorporation of jumps, spins, kicks, and strikes, Wushu practitioners face a variety of potential injuries.
- **Typical Injuries:** Sprains, especially ankle sprains, are prevalent. There are also incidences of overuse injuries, given the repetitive nature of certain Wushu forms. The use of weapons in some styles can lead to additional risks and unique injury types.

Study Design

- **Study Area:** Department of Exercise Physiology, Sports Science, BKSP.
- **Study Population:** Both male and female athletes undergoing regular training in Taekwondo, Karate, and Wushu at BKSP.

- **Study Duration:** June to August 2023.
- **Sampling:** Chosen through an appropriate method, the study encompassed 75 participants. Among them, 72 provided specifics about their discipline: 32 in Karate, 23 in Taekwondo, and 17 in Wushu.
- **Selection Criteria:** Participants with at least one year of training at BKSP were included in the study.

Methods

In this study, we wanted to learn more about injuries and safety in athletes doing Taekwondo, Karate, and Wushu at BKSP training centers in Dhaka and Barisal. We asked 107 athletes from these sports to take part in the study. We received answers from 75 athletes, which gave us enough data for our analysis.

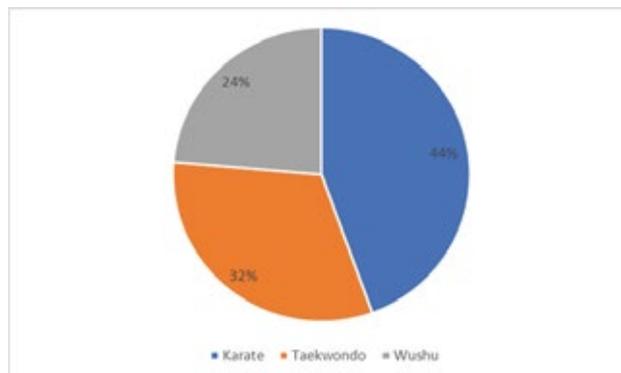
We used a 23-question survey to gather our data. This survey asked about things like age and gender, as well as details about the athletes' training routines and any injuries they've had. We also asked about the safety equipment athletes use and how safe they feel in their sports.

We gave the survey in paper and online forms. Before taking part, each athlete gave their informed consent, understanding what the study was about and what it involved.

To respect the privacy of the athletes, we made all the data anonymous. We removed any details that could identify the participants.

Results

We collected data from 75 participants, who were all active in different martial arts including Karate, Taekwondo, and Wushu. Of the 75 participants actively involved in various martial arts, 72 provided information about their specific discipline. Among these 72 respondents, 32 practiced Karate, 23 were into Taekwondo, and 17 practiced Wushu



Participants were between 12 and 24 years old, and most of them were males. On average, they had been practicing martial arts for 4.8 years and trained around 15.7 hours a week.

Many participants, especially those doing Taekwondo, had a black belt. Karate practitioners had ranks from orange to black belts. Most participants reported that they took part in competitions, which means they're very involved in their martial arts.

On a scale of 1-10, participants rated their fitness level as 8.6 on average, showing that they generally feel very fit. None of the participants reported having any health conditions before the study.

Almost all (97.4%) of the participants reported having at least one injury from their martial art, with an average of 2.1 injuries in the past year. From the 75 participants surveyed, strains were the most frequently reported injury, with 28 incidents, mainly in the legs and knees. Sprains and cuts were the next common, each being reported by 10 participants. Bruises were noted by 5 individuals, and fractures, though more serious, were less common with only 3 reported cases. Head injuries were reported by 4 participants. Additionally, there were 10 reports of injuries that fell into the 'Other' category, indicating a range of injuries not specified in the main categories. It's important to note that some participants reported experiencing more than one type of injury.

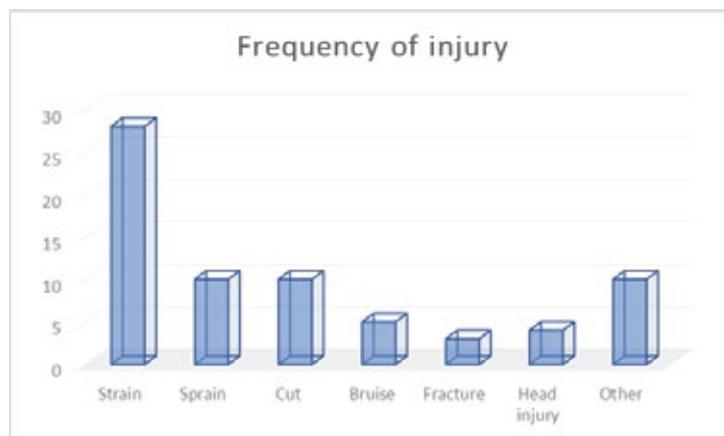


Figure 2: Distribution of various injury types by frequency.

Most injuries happened during training, but a good number also happened during competitions. On average, these injuries took about 7.9 weeks to heal, and 32.4% of injured participants had the same injury happen again. About 38.5% of participants had to take a break from their martial arts because of an injury, with breaks lasting around 35.8 days on average.

Most participants reported using various types of safety equipment, including helmets, mouthguards, chest protectors, arm guards, gloves, and foot gear. Almost everyone said they do warm-up and cool-down exercises as part of their routine.

On a safety scale of 1 to 10, participants rated the safety of their martial arts as 8.3 on average. Most participants also felt that their training prepared them well for the physical demands of their sport.

Discussion

Different Martial Arts, Different Injuries: Our study showed that each martial art has its own common injuries. For example, Taekwondo athletes, because they use a lot of kicks, often get hurt in the legs. Karate and Wushu athletes can get a mix of injuries because of the many moves they use.

How Training Affects Injuries: How athletes train is super important. If they train the wrong way, use bad techniques, or don't wear the right safety gear, they might get hurt more often. For instance, if a Karate athlete doesn't punch right, they might hurt their wrist or hand.

Injuries Can Slow Down Athletes: When athletes get hurt, they can't train or compete for some time. This makes them lose practice time, and they might also become scared of getting hurt again. Our study showed that some athletes even got the same injury more than once.

Safety: What Athletes Think vs. What Happens: It's interesting that many athletes felt their sport was safe, giving it a high safety score. But, most of them had been injured at least once. This might mean they think small injuries are no big deal, or they just feel tough and don't want to admit they can get hurt.

We Need to Keep Athletes Safe: Lots of athletes got hurt in our study, so it's clear we need to find better ways to keep them safe. This means teaching them the right way to move, making sure they wear protective gear, and ensuring everyone knows that staying safe is super important.

To sum it up, our study found that the kind of martial art and how athletes train can influence their injuries. We need to pay attention to these things to make sure athletes stay safe and can enjoy their sport.

Recommendations and Preventative Measures

1. Tailored Training Routines:

- *Rationale:* Each martial art has its unique demands. Customizing training routines specific to the martial art can help in preparing the athlete's body better and reducing the risk of injuries.
- *Recommendation:*

- For Taekwondo, emphasize strengthening lower body muscles and improving flexibility to reduce the risk of leg injuries from high kicks.
- For Karate, since injuries are more diverse, a balanced training regime targeting both the upper and lower body is essential.
- Wushu practitioners should focus on overall body conditioning, given the art's comprehensive movement range.

2. Safer Practice Methods:

- *Rationale:* Proper techniques can significantly reduce the risk of injuries.
- *Recommendation:* Coaches should be trained and retrained in recognizing improper techniques and correcting them promptly. Slow-motion video analysis can help in identifying and rectifying technique flaws.

3. Proper Use of Safety Equipment:

- *Rationale:* Safety equipment can absorb the impact and reduce injury severity.
- *Recommendation:* Ensure athletes always use high-quality, well-fitted safety gear, including helmets, mouthguards, chest protectors, arm guards, gloves, and foot gear. Routine checks and replacement of worn-out equipment are essential.

4. Regular Warm-Up and Cool-Down Exercises:

- *Rationale:* Proper warm-up increases blood flow to muscles, making them more flexible and less prone to strains. Cool-down exercises help in gradually lowering heart rate and reducing muscle stiffness.
- *Recommendation:* Integrate a mandatory 10-15 minute warm-up and cool-down session before and after training. These sessions should include light cardiovascular exercises and stretching routines.

5. Injury Monitoring and Reporting:

- *Rationale:* Regular monitoring can help in early detection and prevention of recurrent injuries.
- *Recommendation:* Establish a system where athletes can promptly report injuries. Periodic medical check-ups, focusing on common injury sites like legs for Taekwondo practitioners, can help in early diagnosis and treatment.

6. Mental and Physical Preparedness:

- *Rationale:* Mental stress can distract athletes, making them more prone to injuries.
- *Recommendation:* Incorporate mindfulness and relaxation techniques into training routines. Ensure athletes are mentally focused before starting any practice or competition.

Conclusion

Martial arts, while offering numerous benefits, come with inherent risks of injuries. This study at BKSP, focusing on Taekwondo, Karate, and Wushu practitioners, underscores the varied injury patterns across these disciplines. Implementing the recommendations and preventative measures suggested can significantly reduce these injuries, ensuring athletes enjoy the sport while maintaining their physical well-being. Continuous research and adaptation of these measures, based on emerging trends, will be crucial in ensuring the safety of martial arts practitioners in the future.

Title: Martial Arts Injury Survey

This survey aims to understand injuries in Taekwondo, Karate and Wushu for improving safety measures. Your responses will be anonymous and confidential, used solely for this study.

Question 1: Please provide your age.

Question 2: What is your gender?

Options: Male, Female, Prefer not to say, Other

Question 3: How many years have you been practicing your martial art?

Question 4: How many hours per week do you train in your martial art?

Question 5: How would you rate your current fitness level on a scale of 1-10? Scale: 1 (Poor) to 10 (Excellent)

Question 6: Do you have any pre-existing health conditions? Options: Yes, No, Prefer not to say

If Yes, Please briefly describe your pre-existing health condition(s).

Question 7: Which martial art do you practice? Options: Taekwondo, Karate, Wushu

Question 8: What is your rank/level in this martial art? Question 9: Do you participate in competitions?

Options: Yes, No

Question 10: Have you ever had an injury related to your martial art practice? Options: Yes, No

Question 11: If yes, how many injuries have you had in the past 12 months? Question 12:

What part of your body was injured? (Check all that apply)

Options: Head, Neck, Shoulder, Arm, Hand, Chest, Abdomen, Back, Hip, Leg, Knee, Foot, Other

Question 13: What was the type of injury? (Check all that apply) Options: Sprain, Strain,

Fracture, Bruise, Cut, Concussion, Other Question 14: How did the injury occur?

Options: During training, During competition, Other

Question 15: How long did it take to recover from each injury? Question 16: Were any of

these injuries recurring?

Options: Yes, No

Question 17: Did you have to stop playing after the injury?

Question 18: How long have you been away from martial arts since the injury?

Question 19: How severe the injury was on a scale of 1 to 5? 1 - No pain, 5- Severe pain

Question 20: What kind of protective gear do you typically use? (Check all that apply)

Options: Helmet, Mouthguard, Chest protector, Arm guards, Shin guards, Groin guard,

Gloves, Foot gear, Other

Question 21: Do you do warm up and cool down exercises?

Question 22: How would you rate the safety of your martial art on a scale of 1-10? Scale: 1

(Very unsafe) to 10 (Very safe)

Question 23: Do you feel that your training adequately prepares you for the physical demands of the sport?

Options: Yes, No, Someti

Mental Toughness Status of Boxing Sportspersons of BKSP and Bhutan

Md. Shafiqul Islam

Sports Psychologist (Sports Psychology)

Bangladesh Krira Shikkha Protisthan, (BKSP), Dhaka, Bangladesh.

E-mail: shafiq.126sm.du@gmail.com



ABSTRACT

The purpose of the present study was to find out mental toughness status of boxing sportspersons of BKSP and Bhutan. There were 35 subjects for the study in a BKSP Boxing sportspersons (N = 21) and Bhutan (N=14). The age ranges of the subjects were 15 to 19 years. The subjects were all both gender sportspersons. Anxiety Control, Concentration, Confidence, Mental Preparation and Motivation, Team Emphasis are A modified version of Psychological Skill Inventory (PSI) inventory prepared by Money, Gabriel and Perfkins (1987 and Patient health questions (PHQ) prepared by Robert L. Spitzer, Janet W.B William and Kurt Kroenke (1999) were used to assess the as psychological variable of the sportspersons. Mean, Standard Deviation, Standard Error and Independent t- test were used to analysis the data, and level of significant was set at 0.05. Significant differences were not found between Boxing Sportspersons of BKSP in Bangladesh and those of Bhutan among the Psychological Variables

Key word: Psychological Skill Inventory, Anxiety Control, Concentration, Confidence, Mental Preparation, Motivation, Team Emphasis and Patient Health Questions.

INTRODUCTION

Mental toughness is one of the psychological dimensions that is considered important in performance, achievement and excellence across many domains of life. Mental toughness is a term used throughout the sporting world it resides in common vocabulary of coaches, athletes, fan, and commentators across sporting context. With regards to sport, mental toughness is a term that coaches, athletes and sport psychology consultants use when discussing psychological factors that differentiate between successful and less successful athletes.

Mental toughness is often the difference between success and failure in a high-pressure situation. For Red Bull athlete, free runner Hazal Nehir, who made a name for herself jumping across gaps between rooftops, her ability is 80% mental strength. It's an important skill for anyone who wants consistent performance at a high level. The same habits of mental toughness that help elite athletes can also help any individual accomplish their goals.

The concept of mental toughness originated in 1898, when Normal Triplett observed that cyclists rode faster when competing on a track with a competitor, than when they rode alone. It was proof that the brain affects performance. 60 years later, sports psychology has become widely popular among professional coaches and athletes. It's now a mainstream notion that has advanced well beyond athletes, referencing the ability to perform under pressure.

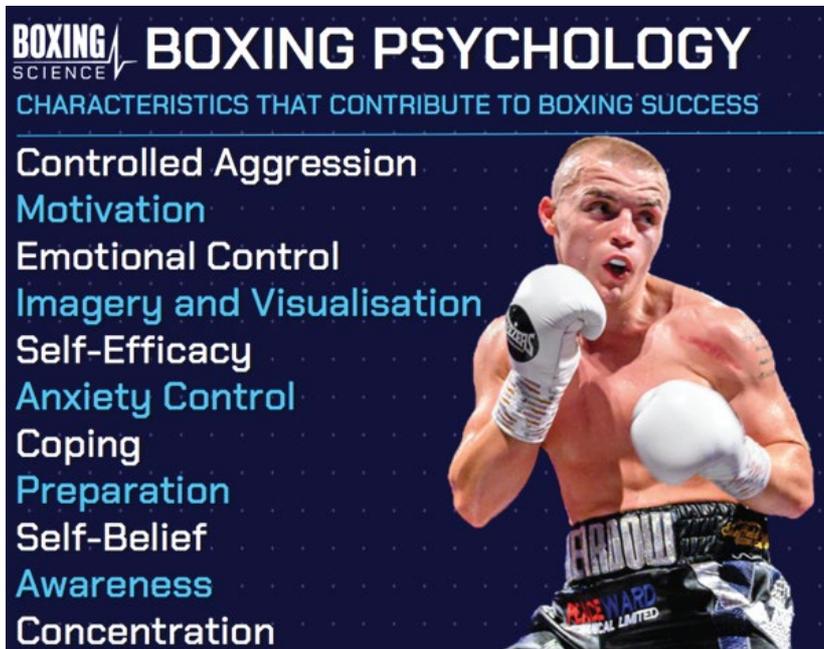
Mental toughness is the power to recover from negative events such as setbacks, conflict, increased responsibility and failure, and the positive psychological capacity that needs to be developed to recover (Luthans, 2002) and required to win a match in boxing. Even if the

boxers are behind or ahead in points, there is always a chance of winning or losing the match with one punch. Therefore, they need to have mental toughness until the end of the match.

Anxiety effects your sporting performance, because it diverts your focus onto losing, tripping, injuring etc. If you are not anxious but feel relaxed, you will find your sports much more fun and will get involved more .Anxiety in considered as a block to activity. A person who suffers from anxiety is not able to devote his full energy in the performance. It is, therefore considered by many that anxiety interferences. This motion is however, based on the wrong understanding of the role of anxiety. In fact anxiety helps in learning or performance or also stimulates it.

Anxiety is a common emotion and is thought to be normal as long as it does not become completely inhibiting. Anxiety has been viewed as feelings of nervousness and tension associated with activation or arousal of the organism. Therefore, anxiety may be defined as negative emotional feelings characterized by apprehensions, worries caused due to relatively non-threatening events or situations. Anxiety relating to sport psychology is defined both in terms of stable and transient characteristics i.e. trait anxiety and state anxiety. Attention and concentration are separate psychological skills combined below due to their overlapping conception.

Boxing depends not only on physical fitness, but top level of psychological adjustment also, which is the present need of the boxers. Psychological factors help coaches to understand the reality of fitness along with behavior of boxer's before and during competition.



BOXING SCIENCE **BOXING PSYCHOLOGY**
CHARACTERISTICS THAT CONTRIBUTE TO BOXING SUCCESS

- Controlled Aggression
- Motivation
- Emotional Control
- Imagery and Visualisation
- Self-Efficacy
- Anxiety Control
- Coping
- Preparation
- Self-Belief
- Awareness
- Concentration

The infographic features a background image of a male boxer in a fighting stance, wearing white gloves and black trunks with 'FORWARD' and 'MEDICAL LIMITED' visible. The text is overlaid on a dark blue background with a starry pattern.

Luthans, F.,(2002). Positive organizational behavior: developing and managing psychological strengths, *Academy of Management Executive*, 16(1), 57-72. Basslor (1977), it is the mental toughness, as heart bears exertion, to sustain hard punches. It is the activities that change the state of one's mind and further exerts pressure and to further influence behavior.

Psychological skills currently most focused on in sport include arousal, mental imagery, attention, concentration, self-confidence, goal setting and motivation (Wann & Church, 1998; Weinberg & Gould, 2007). Attention involves focusing mental ability on a current task. Concentration entails sustaining attention over a period of time, while being aware of environmental and situational factors (Harris & Harris, 1984; Weinberg & Gould, 2007). It is particularly important during lengthy sporting competitions.

Canadian National Wrestling Team qualifiers compared with no-qualifiers were higher in self-confidence, close to reaching their maximum athletic potential, more able to block anxiety one hour prior to and during competition, and experienced fewer negative self-thoughts one hour prior to competition (Highlen & Bennett, 1979)

The study of the 1988 U.S Olympic wrestling teams (Gould, Ecklund, & Jackson, 1990) also revealed many similar findings to Orlick and Partington's study of Canadian Olympic athletes concerning use of psychological skills. The wrestlers utilized four general dimensions of mental skill. Imagery skills were the most frequently reported mental skill. Imagery was used to create positive images; mentally rehearse tactics, strategies, and techniques: relax; and reinforce goals and objectives. Thought control techniques such as thought stopping, self-talk, positive thinking, and prayer were common. Emotional control skills were used to regulate activation level and to create feelings associated with optimal performance.

Williams and Reilly (2000) talk about self-confidence, anxiety control, motivation and concentration with the purpose of clarifying that these variables constitute the basis for becoming an expert in the sports field.

(Gimeno, Buceta, and Pérez-Llantada 2007) offer a research into the analysis about the influence of psychological variables on achieving success. A part of their study focuses on demonstrating the relevance of psychological skills training to implement athletic performance. They also clarify in this study that highly important psychological variables such as motivation, attention, stress, anxiety, self-confidence, states of mood, self-control and self-regulation, cohesion, interpersonal skills or emotional adjustment, participate in all areas involving competitive sport.

Mental preparation is a complex psychological platform, but can be identified in boxing as

the training of personality traits, psychological factors and habits – attention, concentration, self-esteem and self-confidence, courage, focus, analytical skills, decision making, endurance, positive attitude, resilience, motivation, among others – that boxers use as a strategy to cope and optimize their performance to win the fight.

A mentally prepared boxer who is known when to become defensive or offensive, when to intimidate or pressure in the ring to get the desired results.

MATERIALS AND METHODS

The purpose of the present study of the research was to find out Mental Toughness Status of Boxing Sportspersons of BKSP and Bhutan. The subjects study was 35 sportspersons which were 21 Boxing Sportspersons of BKSP and 14 were Boxing Sportspersons in Bhutan. The age ranges of the subjects were 15 to 19 years. The subjects were all both gender Sportspersons. Anxiety Control, Concentration, Confidence, Mental Preparation and Motivation, Team Emphasis are prepared by Mahoney and Gabel, Perking (1987) and Patient Health Questions are prepared by Robert L. Spitzer, Janet W.B William and Kurt Kroenke (1999) were used to assess the as psychological variable of the sportspersons.

RESULTS

Means, Standard Deviation, Standard Error and t-ratios were computed in order to analysis the separately for the Boxing Sportspersons of BKSP and Bhutan. The level of significance chosen was .05 levels. The statistical analysis of data has been separately presented for Psychological Variable according to table.

Table-01

Means, Standard Deviation, Standard Error and t-ratios of Psychological Variable is like Anxiety Control for the Boxing Sportspersons of BKSP and Bhutan.

Group	Size	Mean	Mean Difference	SD	SE	't' ratio
BKSP	21	22.57	5.68	4.24	33.01	0.171
Bhutan	14	16.92		6.36		

* Not significant at .05 level

t. 05(33) = 1.69

Table 01 reveals that there is no significant difference in Psychological Variable is like Anxiety Control between Boxing Sportspersons of BKSP and Bhutan. The t-ratio-0.171 is less than the table value of 1.69 required for the difference to be significant at .05 levels.

Table-02

Means, Standard Deviation, Standard Error and t-ratios of Psychological Variable is like Concentration for the Boxing Sportspersons of BKSP and Bhutan.

Group	Size	Mean	Mean Difference	SD	SE	't' ratio
BKSP	21	17.00		7.07		
Bhutan	14	10.57	6.43	1.41	29.50	0.217

* Not significant at .05 level

t. 05(33)=1.69

The analysis of the Table 02 reveals that there is no significant difference in Psychological Variable is like Concentration between Boxing Sportspersons of BKSP and Bhutan. The t-ratio-0.217 is less than the table value of 1.69 required for the difference to be significant at .05 levels.

Table-03

Means, Standard Deviation, Standard Error and t-ratios of Psychological Variable is like Confidence for the Boxing Sportspersons of BKSP and those of Bhutan

Group	Size	Mean	Mean Difference	SD	SE	't' ratio
Cricket	21	25.42		7.07		
Football	14	12.71	13.32	6.36	42.24	0.300

* Not significant at .05 level

t. 05(33)=1.69

The analysis of data in Table 03 reveals that there is no significant difference in Psychological Variable is like Confidence between Boxing Sportspersons of BKSP and Bhutan. The t-ratio-0.300 is less than the table value of 1.69 required for the difference to be significant at .05 levels.

Table-04

Means, Standard Deviation, Standard Error and t-ratios of Psychological Variable is like mental preparation for the Boxing Sportspersons of BKSP and Bhutan.

Group	Size	Mean	Mean Difference	SD	SE	't' ratio
Cricket	21	13.23		2.12		
			1.52		8.07	0.188
Football	14	11.71		.70		

* Not significant at .05 level

t. $_{.05}(33) = 1.69$

Table 04 reveals that there is no significant difference in Psychological Variable is like Mental preparation between Boxing Sportspersons of BKSP and Bhutan. The t-ratio-0.188 is less than the table value of 1.69 required for the difference to be significant at .05 levels.

Table-05

Means, Standard Deviation, Standard Error and t-ratios of Psychological Variable is like Motivation for the Boxing Sportspersons of BKSP and those of Bhutan

Group	Size	Mean	Mean Difference	SD	SE	't' ratio
Cricket	21	18.71		4.94		
			1.60		22.10	0.113
Football	14	16.21		1.41		

* Not significant at .05 level

t. $_{.05}(33) = 1.69$

The analysis of data in Table 06 reveals that there is no significant difference in Psychological Variable is like Motivation between Boxing Sportspersons of BKSP and Bhutan. The t-ratio-0.113 is less than the table value of 1.69 required for the difference to be significant at .05 levels.

Table-06

Means, Standard Deviation, Standard Error and t-ratios of Psychological Variable is like Team Emphasis for the Boxing Sportspersons of BKSP and Bhutan.

Group	Size	Mean	Mean Difference	SD	SE	't' ratio
BKSP	21	16.09		3.53		
			-0.41		14.44	-0.028
Bhutan	14	16.50		.70		

* Not significant at .05 level

t. 05(33) = 1.69

The analysis of data in Table 01 reveals that there is no significant difference in Psychological Variable is like Team Emphasis between Boxing Sportspersons of BKSP and Bhutan. The t-ratio -0.028 is less than the table value of 1.69 required for the difference to be significant at .05 levels.

Table-07

Means, Standard Deviation, Standard Error and t-ratios of Psychological Variable is like Patient Health Questions for the Boxing Sportspersons of BKSP and those of Bhutan

Group	Size	Mean	Mean Difference	SD	SE	't' ratio
BKSP	21	05		2.12		
			-1.05		5.87	-0.178
Bhutan	14	6.05		1.41		

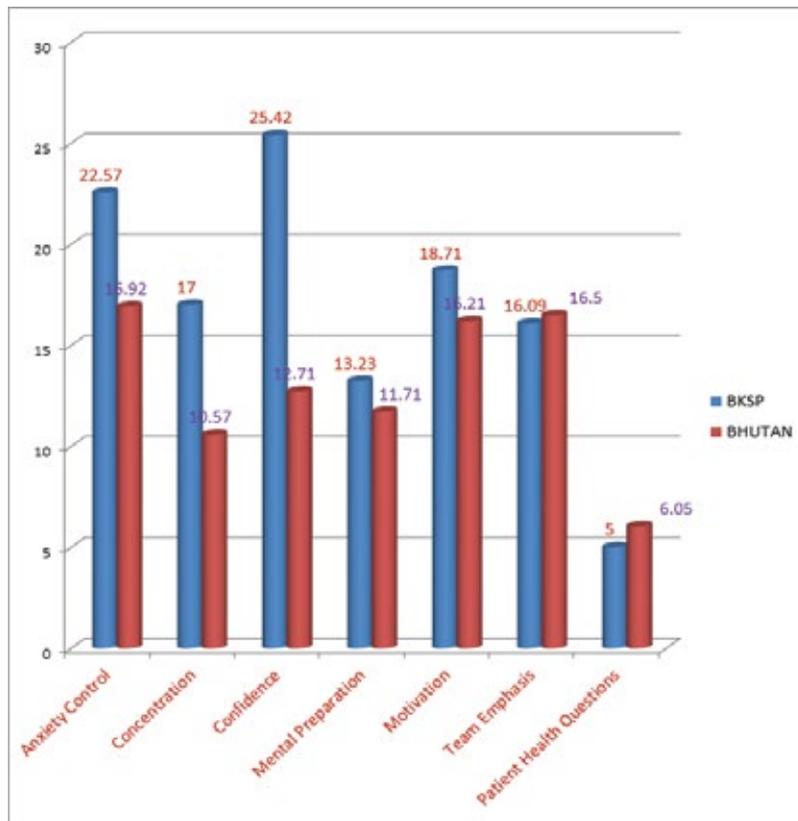
* Not significant at .05 level

t. 05(33) = 1.69

The analysis of data in Table 07 reveals that there is no significant difference in Psychological Variable like Patient Health Questions between Boxing Sportspersons of BKSP and Bhutan. The t-ratio -0.178 is less than the table value of 1.69 required for the difference to be significant at .05 levels.

Table-08

Means of Psychological Variables are like Anxiety Control, Concentration, Confidence, Mental Preparation, Motivation, Team Emphasis and Patient Health Questions for the Boxing Sportspersons of BKSP and those of Bhutan



DISCUSSION

The purposes of the present study were to find out difference mental toughness status of boxing sportspersons of BKSP and Bhutan. The subjects study was 35 sportspersons which were 21 boxing sportspersons of BKSP and 14 were boxing sportspersons of Bhutan. The age ranges of the subjects were 15 to 19 years. anxiety control, concentration, confidence, Mental preparation and motivation, team emphasis are prepared by Mahoney and Gabiel, Perking (1987) and Patient Health Questions are prepared by Robert L. Spoitzer, Janet W.B William and Kurt Kroenke (1999) were used to assess the as psychological variable among the sportspersons. Mean, Standard Deviation, Standard Error and Independent t- test were used to analysis the data, and level of significant was set at 0.05. Significant differences were not found between Boxing Sportspersons of BKSP in Bangladesh and those of Bhutan among the psychological variables.

Peak performances are those magic moments when the sportspersons put it all together both physically and mentally. Its focus is on the mental side of peak performance and how the mind interacts with the body in ultimately producing performance. Most sportspersons and coaches will acknowledge that at least 40% to 90% of success in sports is due to mental factors. The higher the skill level, the more important the mental aspects become. In fact, on the elite competitive level, it is not uncommon to hear that the winner invariably comes down to who is the strongest sportspersons mentally on a given day!

Our athletic performance division focuses on developing both the mental and physical capabilities of a person as well as the connection between them. Our team enhances both the physical and mental performance by helping to analyze performance gaps and develop solutions allowing individuals to perform at your peak potential. Our goal is to maximize athletic performance and ultimately create a competitive advantage for individuals and teams.

Our mental conditioning element provides techniques and strategies including positive thinking, concentration, and visualization to develop the mental aspect. Our physical segment encompasses both nutritional education and fitness.

CONCLUSIONS

From the findings of the study we can conclude that there is no significant difference in mental toughness between the boxing sportspersons of BKSP and Bhutan. But individual differences were found between the boxing sportspersons. BKSP boxers have shown anxiety control, concentration, confidence, mental preparation, motivation and Patient Health is better (mean value is 22.57, 17.00, 25.42, 13.23 ,18.71.05) than Bhutanese Boxers (mean value is 16.92 ,10.57. 12.71, 11.71, 16.21.6.05) and Bhutanese boxers have shown team emphasis is better (mean value is 16..50) than BKSP boxers (mean value is 16..09). Therefore mental toughness is found in better of boxing sportsperson of BKSP than those of Bhutan.

Some of individual BKSP boxing sportspersons have more time for mental skills practice and they do so in a quiet environment while distraction and loss of concentration are part of the sports, therefore we can conclude that higher concentration of Individual Game players because of this particular reason. Finally, we can conclude by saying that as the players scored high in most of the attributes of mental toughness.

RECOMMENDATION

This study provides a foundation for future research and intervention in Bangladesh where programs need to be implemented to enhance mental toughness and sporting performance of adult athletes and for the growth and development of young sportspeople. More PST interventions should be promoted with parents, principals and sport coaches and implemented in schools to promote life, health, sport and psychological skill training.

The following recommendations may be made for improved psychomotor performance among players.

- The coaches and instructors should thoroughly examine the physical and mental status of the players during the selection process.
- During selection and training programs of sportspersons emphasis must be laid on mental skills of the players.
- A longitudinal study may be conducted to see if the high score on selected psychological variables by a player will predict their performance as seen among various international and national players.
- A same research can be undertaken among Boxing Sportspersons.

REFERENCES

- Gould, D, Ecklund, R.C. & Jackson, S.A. An in-depth examination of mental factors and preparation techniques associated with 1988 U.S. Olympic team wrestling excellence. Unpublished final project report to USA wrestling, 1990.
- Gould, D., Damarjian, N., & Medbery, R. An evaluation of mental skills training in junior tennis coaches [Electronic Version]. *Sport Psychologist*, 13, p137, 17p.2004
- Hanton, S., Wadye, R., & Connaughton, D. Debilitating interpretations of competitive anxiety: A qualitative examination of elite performers [Electronic Version]. *European Journal of Sport Science*, 5, 123-136, 2005
- Harris, D.V., & Harris, B.L. *The athletes guide to sport psychology: mental skills for physical people*. Champaign, Illinois: Leisure Press, 1984
- Jones, G., Hanton, S., & Connaughton, D. (2002). What is this thing called mental toughness? An investigation of elite sport performers. *Journal of Applied Sport Psychology*, 14, 205-218.
- Lane, A. (2009). Consultancy in the ring: Psychological support to a World Champion professional boxer. In B. Hemmings & T. Holder (eds.), *Applied Sport Psychology: A Case-Based Approach*. Chichester: John Wiley & Sons Ltd.
- Mahoney, M.J. Gabriel, T.J. & Perkins, T.S. Psychological skills and exceptional athletic performance. *The Sport Psychologist*, (1987), 1, 181-199.

- Mahoney, M. J., & Avenger, M. Psychology of the elite athlete: An exploratory study. *Cognitive Therapy and Research*, 1, 1977, 135-142.
- Martin, G.L., & Toogood, A. Cognitive and behavioral components of a seasonal psychological skills training program for competitive figure skaters [Electronic Version]. *Cognitive and Behavioral Practice*, 4, 383-404, 1997
- Orlick, T., & Partington, J. Mental links to excellence. *The Sport Psychology*, 2, 1988 105-130. Ravizza, K. Peak experience in sport. *Journal of Humanistic psychology*, 17, 1977, 35-40
- Rushall, B.S. Sport psychology: The key to sporting excellence *International Journal of Sport Psychology*, 20, 1989, 165-190.
- Voight, M. Integrating mental-skill training into everyday coaching [Electronic Version]. *The Journal of Physical Education, Recreation & Dance*, 76, 38-47, 2005
- Wann, D., & Church, BA method for enhancing the psychological skills of track and field athletes [Electronic Version]. *Track coach*, 114. Retrieved May, 1998
- Williams, A., & Reilly, T. (2000). Talent identification and development in soccer. *Journal of Sports Sciences*, 8, 657-667.

A Brief Review and Discussion on the Importance of Optimum Nutrition in Sports Performance

Salina Canadi

Senior Lecturer

Uttara University, Dhaka, Bangladesh

Department of Physical Education

Email: salinacanadi@gmail.com



Introduction:

Good nutrition can enhance sporting performance. Nutrition plays a crucial role in maintaining proper energy levels for physical activity, stamina, body fluids, and electrolytes. It also promotes the overall good health and wellness of any individual. An athlete undergoes frequent changes in body composition through intensive physical training and competitions. A well-planned, nutritious diet should meet the most need for vitamins and minerals, and provide enough protein to promote muscle growth and repair of an athlete. Sports nutrition plans help the individual athlete to meet their nutritional need considering their specific sport, goals, food preferences, and practical challenges.

Sports nutrition is a specialization within the field of nutrition that promotes the application of nutrition knowledge to practical dietary strategies and plans of athletes aiming to optimize fuel for physical activity, facilitating the repair and building process following hard physical work and achieving athletic performance. Over the years, sports nutrition has changed; and most recently, is growing rapidly with the help of advanced science and research.

Why nutrition is important in sports?

- Optimal nutrition and dietary modifications are must for targeted fitness development and participating in endurance sports. At the time of final performance an athlete is supposed to be well nourished, uninjured, fit, focused and ready to compete. Nutrition the foundation for leading an active lifestyle, avoiding potential overweight, reducing motor deficiencies and thus improving the general quality of life.
- Athlete undergoes frequent body modification through tough physical training and competitions. They need adequate energy on day-to-day basis in order to keep up with demand for stamina of their activity or sport.
- Eating habit has an impact on strength, training, performance and recovery of an athlete. The timing of eating, food types, and nutritional adequacy are very important which has an impact on athlete's performance level and their body ability to recover after workout.
- Greany asserted that optimal nutrition ensures the best platform for success in any sport through providing fuel for exercise, recovery, muscle building, weight maintenance.
- Studies show that proper nutrition for young athletes is critical not only to their athletic success, but more importantly to their growth, development and overall health.
- Poor nutrition can lead to injury, fatigue, and poor recovery, all three of which can impair an athlete's performance.

Optimal nutrition and nutrients need for an athlete:

Popularly, it is advised that athletes should eat meal should be high in carbohydrates, low in fat, and low to moderate in protein. But, the ideal diet for an athlete is not very different from the diet recommended for any healthy person. And, it should be based on the general role of balance nutrition with energy intake divided into:

- 45 to 65% from carbohydrates
- 15 to 25% from protein
- 20 to 35% from fat

Balance nutrition benefits an athlete in many ways-

- Provide energy for training & competition
- Delays onset of fatigue
- Maintains a healthy immune system
- Enhances performance
- Improves recovery
- Achieves and maintains optimal body weight & composition
- Reduces potential of injury
- Helps with focus and concentration

¹ Fogelholm M (2010) Physical activity, fitness and fatness: relations to mortality, morbidity and disease risk factors. A systematic review. *Obes Rev* 11: 202-221.

² Burke LM, Hawley JA, Wong SH, Jeukendrup AE (2011) Carbohydrates for training and competition. *J Sports Sci* 29 Suppl 1: S17-S27.

³ Shirreffs, SM Sawka MN (2011) Nutrition for endurance sports™ marathon, triathlon, and road cycling, New Delhi. 101-107.

⁴ Greany J (2015) How much physical activity should I do for good health. Piedmont heart institute

⁵ Clark, Nancy (2008) Sports nutrition guide book: The 1st Nutrition resources for active people. Health work fitness center chestnut hill, MA, USA, pp. 103-105.

⁶ Costill DL, Miller JM (1980) Nutrition for endurance sport: carbohydrate and fluid balance. *Int J Sports Med.* 1: 2-14.

However, nutrition plans should be tailored to the individual athlete, taking into account their age, body weight and composition, physical activity level, specific sport, the amount of time spent training, food preferences, and other practical challenges. The main role of sports nutrition is to support training programs. With the changes in training program changes, the nutritional intake will need to be adjusted for better performance.

Balance nutrition comes from the consumption of just the right amounts of calories, macronutrients and micronutrients that can meet bodily needs for energy production, growth and development of tissues, regulation of metabolic processes and prevention of deficiency and degenerative diseases. These nutrients play crucial role in all of the life processes, with no exception during sporting activity, of any individual. There are six vital nutrients obtained from foods perform these basic bodily functions. The nutrients are -

- Carbohydrates
- Proteins
- Fats
- Vitamins
- Minerals and
- Water.

Basis functions of these nutrients are mentioned below-

Carbohydrates: Carbohydrates are stored as glycogen in the muscle, which is used during physical activity. Carbohydrate is indispensable to meet the demands of energy needed during exercise, to maintain blood glucose level and to replenish muscle glycogen store. During sub-maximal exercise, carbohydrates in the body are the major source of energy.

Protein: Proteins are needed for transportation nutrients in the blood, supporting connective tissues, repair of tissues, regulating hormone and enzymatic actions in the body.

Fats: During low to moderate intensity exercise, fat is largely used as fuel. Fat is also involved in forming and maintaining integrity of cell membranes, assisting in hormone production, lining the nerves for proper functioning, and facilitating the metabolism of fat-soluble vitamins.

Vitamin and Minerals: The body needs vitamins for a wide range of metabolic processes that maintain it healthy and disease-free. Minerals play a role in the regulation of body functions as well as the structural development of tissues.

Water: Water makes about 55–60% of the human body, making it almost always present in tissues and bodily fluids. In sports, water is crucial for maintaining body temperature, lubricating joints, and carrying nutrients to active areas in the body.

Factors to be considered in making a proper nutrition plan for athletes:

Proper nutrition plan provides a person with enough energy and nutrients to meet the demands of training and exercise. It not only helps a person perform at their best, but also

facilitates recovery. Holway and Spriet (2011) confirmed that in addition to protein requirements, sufficient carbohydrates with adequate energy balance should be included in the nutrition plan. Strength and team sports require a muscle building program with adequate nutrition. Athletes may need to consider

- their caloric needs
- macronutrient amounts and ratios
- meal and snack timings
- vitamins and minerals for recovery and performance
- hydration

Not only is the nutritional content of food important, but other factors also play an important role in food selection for important events. A study was conducted to evaluate the food provision and nutrition support at the London 2012 Olympic (OG) and Paralympics Games (PG) from the perspective of sports nutrition professionals attending the event. Participants (n=15) completed an online survey and assessed menu quality, food safety, quantity, sustainability patterns, nutrition labeling, meeting ethnic needs, meal planning, and specific circumstances on a Likert scale. Participants graded their overall knowledge of the food supply as 7.6 out of 10 (range 5 to 10). The availability, variety, presentation, temperature and freshness of menu items ranked as average to good. A number of feedbacks were received about the gluten free diet and lower energy food items.⁸

Protein requirements have been compared among several population groups, including athletes and other exercisers. More recently, blends of dairy proteins and soy proteins have appeared in commercial sports nutrition products such as nutrition bars and ready-to-drink powdered drinks. All of the dietary supplement industries have found a growing market.⁹

Other important factors responsible for food choices for athletes:

- Failure to meet general nutritional needs or provide specific nutritional support to a training session can impair acute performance and reduce training and recovery effectiveness.
- Muslim athletes who fast during Ramadan should take the opportunity to consume overnight foods and beverages that can provide the nutrients they need to improve performance, adaptation and recovery in sports and activities.
- The use of weight loss diets, food choices, and frequent weight fluctuations in athletes preparing for heavyweight competition and lean sports have caused a variety of problems over the years.

- Timing of meals and snacks is critical to athlete performance. The timing and content of meals can help support exercise goals, reduce fatigue, and optimize body composition.
- Dehydration reduces exercise capacity and in extreme cases can lead to collapse and even death. Adequate fluid intake before, during and after exercise is very important.

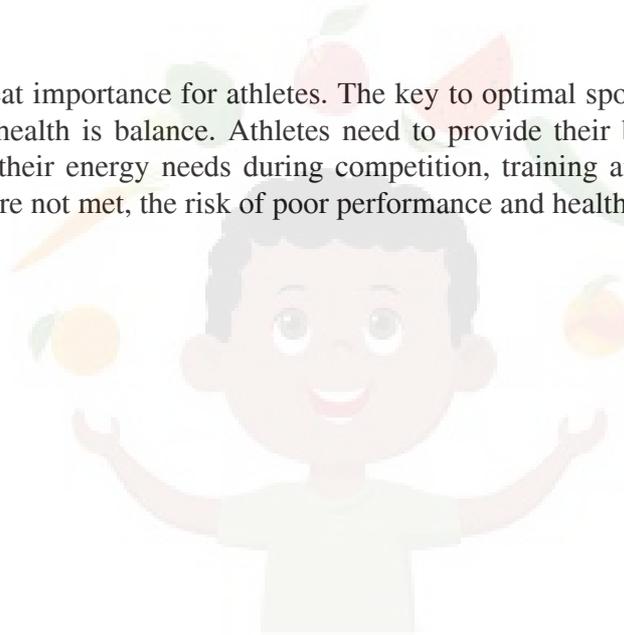
7 Holway FE, Spriet LL (2011) Sport-specific nutrition: practical strategies for team sports. *J Sports Sci.* 29: Suppl 1: S115-S125.

8 Pelly F, Meyer NL, Pearce J, Burkhart SJ, Burke LM (2014) Evaluation of food provision and nutrition support at the London 2012 Olympic Games: the opinion of sports nutrition experts. *Int J Sport Nutr Exerc Metab.* 24: 674-683.

9 Phillips SM and Van Loon LJ (2011) Dietary protein for athletes: from requirements to optimum adaptation. *Journal of sports sciences* 29: S29-S38.

Conclusion

Nutrition is of great importance for athletes. The key to optimal sports nutrition for peak performance and health is balance. Athletes need to provide their bodies with the right nutrients to meet their energy needs during competition, training and recovery. If these nutritional needs are not met, the risk of poor performance and health problems increases.



Leg Strength Assessment of Bangladesh Armed Forces Commando Selection Test

S. M. Zahangir Alam Rony

Senior Research Officer (GTMT)

Bangladesh Krira Shikkha Protisthan (BKSP)

Email: ronyjamalpuri@gmail.com

Amirul Islam Mehedy

Student, PGD in Sports Science of Sports Training,
BKSP, Dhaka, Bangladesh.

Md. Masud Rana

Student, PGD in Sports Science of Sports Training,
BKSP, Dhaka, Bangladesh.



ABSTRACT

The purpose of this study was to carry out leg strength assessment of 62 Bangladesh Armed Forces (Commando Selection Test). In this selection test 06 Commission officer and 56 Soldier were selected from different Forces of Bangladesh Armed Forces. The age of the Subjects was between 19 to 26 years. To conduct this study is quantitative research model in the form of deformities based on percentage analysis. It was observed that Commandos 16% subject were Excellent, 19% were Very Good, 26% were Good, 21% were Average, 10% were poor and 08% subject were Very Poor.

Key Words: Standing Broad Jump scale, Explosive Strength.

INTRODUCTION

Fitness is understood as the ability to do some work. It is a total concept for human being and is composed of many-sided components like physical fitness, mental fitness, social fitness, intellectual fitness and so on.

Physical fitness is a part of total fitness. It indicates the ability of an individual to do some physical work. Physical fitness mainly depends on the organic function of the body. So, physical fitness is also considered as physiological or organic fitness. Motor fitness is a part of physical fitness. It indicates the ability of individual to do some motor task or movement activity.

Motor fitness has many components like speed, strength, endurance, agility, flexibility, balance, co-ordination etc.

It is not possible to measure motor fitness by a single test because motor fitness involves several components of different nature. Generally motor fitness is measured by measuring different components using different tests. Thus, total motor fitness is measured by using different motor fitness tests. This combined form of motor fitness test is called motor fitness test battery. There are renowned motor fitness batteries composed of different motor fitness test.

Motor fitness depends on many factors. Some of them are practice of movement activities, age, sex, nutrition etc. There have been many research work to study motor fitness, with respect to age, sex and other influencing factors. Present study was also a similar work with the purpose of analyzing change of motor fitness for school boys.

Uppal and Chib (2001), while working with Volleyball players concluded that explosive strength of the leg and agility were important motor components for predicting performance in the game.

Li and Mohammad (2002) in their study observed that shoulder flexibility arms and Shoulder girdle strength, legs explosive strength and flexibility are important prerequisites for good performance in swimming.

The Standing long jump, also called the Broad Jump, is a **common and easy to administer test of explosive leg power**. Purpose: to measure the explosive power of the legs. Equipment required: tape measure to measure distance jumped, non-slip floor for takeoff, and soft-landing area preferred.

The broad jump is primarily used to measure a player's short-area quickness and burst. Players jump from a standing position, and they must land balanced. Players cannot move forward or backward after landing. It's a **measure of lower-body balance and strength**.

The purpose of the broad jump is **to measure the explosive power of legs**. The further an athlete can jump, the more explosions he or she has. While the jump seems easy to perform, this is not an easy exercise since an athlete must jump from a still and standing position.

The standing long jump, also known as the standing broad jump, is an athletics event. It was an Olympic event until 1912. It is one of three standing variants of track and field jumping events, which also include the standing high jump and standing triple jump.



Pix: Standing Broad Jump (Bangladesh Armed Forces Commando Selection Test)



Materials and Methods

62 Bangladesh Armed Forces member were selected from different Forces of Bangladesh the age of the subject was 19 to 26 years. As soon as they reported at the institute there is status in respect of strengths which were assessed using the Standing broad jump Scale.

The performance of the subject was graded with the help of age wise norms available at the institute. With the help of the score in test item, an individual profile was prepared for each subject. The qualitative assessment of performance of subject was done as per the following criteria;

Norms

Age	Excellent	Above Average	Average	Below Average	Poor
16	2.15m→	2.11m-1.95m	1.95m-1.85m	1.84m-1.68m	←1.68m
17	2.26m→	1.26m-2.11m	2.10m-1.98m	1.97m-1.85m	←1.85m
18	2.36m→	2.36m-2.21m	2.20m-2.11m	2.10m-1.98m	←1.98m
18→	2.44m→	2.44m-2.29m	2.28m-2.16m	2.15m-1.98m	←1.98m

RESULTS

Table

Leg Strength of Bangladesh Armed Forces Commando Selection Test (N=62)

Type of Grading	Number	Percentage
Excellent	10	16%
Very Good	12	19%
Good	16	26%
Average	13	21%
Poor	11	18%

Before the administration of tests for Collection of data, the subjects were familiarized with tests and testing procedures. They are also allowed to have practice as to enable them to give their best performance when the test is finally administered. Even though no motivational techniques were employed in the project, yet the subjects were urged to put in their maximum effort while performing the tests.

In order to ensure your informing conditions for all the subjects, the tests were administered in the morning session. The duration of the tests was adjusted in such a way that fatigue might not set in. Sufficient time was provided in between the tests to enable the subjects to put in their best. The subject took all their tests in their proper sports kit.

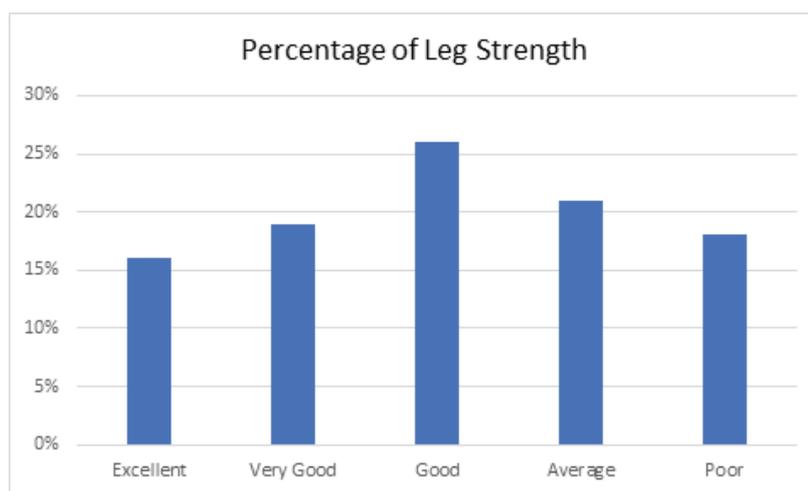


Chart - 1



Chart-2

The above table reveals that 62 Armed Forces (Commando Selection Test 2024) was participated in this test. In Leg strength test results were Excellent 16%, Very Good 19%, Good 26%, Average 21%, Poor 10% and Very Poor 08%.

REFERENCES

1. Barrow, H. M. (1983). Man and movement Principles of physical education. Philadelphia, US. Lea & Fibiger.
2. Barrow, H. M. and McGee, R. (1979). A Practical Approach to Measurement in Physical Education. Philadelphia, US. Lea & Fibiger.
3. Pratt, C. (2007). Ancient civilization of human race. New York, New York Rosen Publishing Group.
4. Adhikari A. Physical and psychological evaluation Of Bangladesh National swimming squad. Bangladesh journal of Sports Science, 2001; 2:66-72
5. Atkinson J. R. predicting performance in tennis, badminton and handball form certain physical traits. Completed research in health, physical education and Recreation, 1973: 8:63.

6. Bhowmick S. Performance related fitness of BKSP boys participating in team games. Bangladesh Journal of Sports Science 2001: 2: 73-77.
7. Bhowmick S. Profile of athletes participating in track and field gymnastic swimming and boxing Bangladesh journal of Sports Science 2002, 1: 22- 28.
8. Dahl D. F. Relationship of jump shooting ability in Basketball to selected measure traits. Completed research in health, physical education and replication, 1977: 19: 1924.
9. Ellena J. D. Relationship of physiological factors to football performance. Completed research in health, physical education and Recreation, 1960: 2:26
10. Khan A. A. Mahbubur R. Motor fitness off BKSP basketball players A profile study. Bangladesh journal of Sports Science, 2003: 2: 74-80
11. Li X. L. and Mohammad S. Relationship of selected motor ability e components and physique characteristic of swimming performance. Bangladesh journal of Sports Science 2002; 1: 1-9
12. Tandon D. K. Uppal A. K. Alegaonkar P.M., and Singh K. Cases of physical education and sports, Friends Publication (India), Delhi, 2001.
13. Uppal A. K. Principles of Sports Training. Friends Publication (India), Delhi, 2001.

Compare of the gender difference in cognitive distortion among sports person

Md.Ashadujjaman Mondol

Student, Post Graduate Diploma in Sports Psychology,
BKSP, Dhaka, Bangladesh.

Nusrat Sharmeen

Senior Research Officer (Sports Psychology),
Bangladesh Kriya Shiksha Protistan (BKSP), Dhaka, Bangladesh.
Email: nusratsharmeen1975@gmail.com



Abstract

The purpose of the present study was to “Compare of the gender difference in cognitive distortion among sportsperson”. For this purpose 37 sportsperson selections as sample in BKSP Hockey player. Purposive sampling method was used to select sample. For this, study used to survey comparison design. An independent samples t-test was used to compare the mean of cognitive distortion score of males (n= 17) and females (n=20) Hockey player. The t-test was not statistically significant, with mean cognitive distortion score of females (M= 55.65, SD= 17.08), was not significantly higher (mean difference 1.47, 95% CI [-12.45, 9.51]), than the males (M=54.17, SD=15.52), $t(37) = -0.273$, $p < .001$. That means female payer has more cognitive distortion than male player. Overall cognitive distortion of female Hockey player is more than male Hockey players but which is not significant.

Keywords: Cognitive distortion, sportsperson, gender.

Introduction

Cognitive distortion is an exaggerated or irrational thought pattern involved in the onset or perpetuation of psychopathological states such as depression and anxiety (Helmond & Petra et al., 2015). Cognitive distortions are thoughts that cause individuals to perceive reality inaccurately. According to Aaron Beck's cognitive model, a negative outlook on reality, sometimes called negative schemas (or schemata), is a factor in symptoms of emotional malfunction and poorer subjective well-being. Specifically, negative thinking patterns reinforce negative emotions and thoughts (Grohol & John., 2009). During difficult circumstances, these distorted thoughts can contribute to an overall negative outlook on the world and a depressive or anxious mental state. There are several types of cognitive distortions (Burns & David D.,1980) such as all-or-nothing thinking, jumping to conclusions, should/shouldn't and must/mustn't statements, gratitude traps, blaming others, personalization and blaming, always being right, minimizing-mislabeling, magnification and minimization, Labeling and mislabeling, assuming the worst, overgeneralizing, disqualifying the positive, mental filtering, selective abstraction etc. There are several factors effect on cognitive distortion they can be classified into internal and internal factor. Internal factors are factors that are subjective. They are inner factors that affect an individual from within such as interest, habits and attitudes, motives and organic states, emotions, past experiences etc. Factors are outside of our immediate control. These factors are objective and they affect the way we make decisions such as intensity, movement, size, contrast, novelty, repetition etc.

Cognitive Style & Athletic Performance

The pressures of competitive sport offer ideal situations for creating irrational or distorted cognitive styles. What athletes say to themselves may not positively contribute to success.

It may, in fact, lead to failure. Some athletes and their coaches believe that the best performance comes from No unconscious thinking (automatic performance). However, it is unreasonable to expect an athlete to shut off all cognitive activity while in competition or training. Thinking should not be blamed for reduced performance. Instead, inappropriate or misguided thinking should be the focus of concern. This is the focus of this article - the assessment, identification and modifications of cognitive styles that negatively impact performance. Distorted thinking styles interfere with performance by providing the athlete with faulty information about the competitive environment, resulting in misdirected attention, emotional distress such as excessive anxiety and lowered self-concept. There are several distorted thinking styles which have been employed by athletes such as perfectionism, catastrophizing, self-worth depends upon achievement, fallacy of fairness, blaming, polarized thinking, one-trial generalizations. Irrational beliefs are well entrenched in our culture and sports in particular. Examples include "No pain, no gain." And "Practice makes perfect." And "Winning Isn't everything, it's the only thing." Many important figures (coaches, parents, athletes) believe that modify some of the thinking can lead to less competitiveness or drive to win.

Role of gender on cognitive distortion

It was found that females had more cognitive distortions and depression than males. On the basis of the present study it may be concluded that cognitive distortions and depression are influenced by gender and females were found to have higher level of cognitive distortions as well as depression than males (Maurya et al., 2016). Two types of longitudinal factors, a single time-invariant "trait-like" factor and a set of time-varying "occasion" factors. The time-invariant factors represent those parts of depressive cognitions that have become stable and "style-like." The depressive cognitive constructs were more trait-like for girls than for boys. Three cognitive constructs (negative cognitions, positive cognitions, and global self-worth) were the most highly correlated with measures of depressive symptoms. That is, the three sets of cognitions that were most strongly related to depression were more trait-like for girls than for boys. The key gender difference lay in the degree to which individual differences in these depressive cognitions were completely stable and trait-like over time. This implies that, compared with girls, boys were more affected by situational factors. Conversely, girls' cognitions were more like personological characteristics, perhaps because the circumstances that generate such cognitions were themselves more persistent over time.

Rational for this study

Cognitive and thinking processes such as perception, imagination, recognition, discovery, thinking, judging, memorizing, learning and often speech are important in sports. Cognitive and thinking processes effect on sport performance. That is why we study "Comparison of the gender difference in cognitive distortion among sportsperson".

Objective of this study

The objective of this study is to compare the cognitive distortion of male and female sportsperson.

Method Participants

A total of 37 Hockey Player participated in this research. They were selected by Purposive sampling technique from BKSP. All participants are currently living BKSP hostel. Their age limit was 12-20. The Purposive sampling technique was applied to select as a sample. A survey research design was used. All participants completed the self-report questionnaires and cognitive distortion scale.

Measures

Data were collected with the following measures Demographic and personal characteristics questionnaire & Dhaka university cognitive distortion scale (Siddika US and KUA Chowhury ., 2013).

Demographic and Personal Characteristics Questionnaire: This question collected data on sex, age, educational qualification, socioeconomic status etc.

Dhaka University Cognitive Distortion Scale: Siddika US and KUA Chowhury., 2013 have developed the Dhaka University Cognitive Distortion Scale. This is a 39 item five point likert scale for assessing different types of cognitive distortion. The score ranging from 0 to 156, cutoff point is 56. The norm of the scale for assessing cognitive distortion is mild, moderate, severe and profound when range of the raw score is 56 to 72, 73 to 91, 92 to 109 and 110 to above, respectively. The inter item consistency and test-retest reliability was found to be 0.890 and 0.962, respectively. Concurrent validity is 0.828 and convergent validity is 0.670, area of ROC curve of this scale is 0.949 which indicated excellent performance.

Data Analysis

In this survey, correlation study design the data were analyzed by Statistical Package for Social Sciences (SPSS) version 18. Statistical analyses were used to describe the patterns for all variables. Regression and correlation analysis utilized to test the relationship between variables and also cause effect.

Descriptive: The data were analyzed using Statistical Package for Social Sciences (SPSS) 18 for Windows. Prior to data entry, all forms were checked for completeness and consistency as well as coding of open ended responses. Descriptive statistics (including

means and standard deviations,) were calculated for all scales and subscales. Frequencies and percentages were computed for categorical scores.

Analytical: Comparison between male and female player cognitive distortion score as the dependent variable and gender as independent variable. While independent sample t-test was use to estimate comparison with other predictors.

Procedure

The researcher collected data personally and requested participant to answer the question without discussing any topic of the question with Hockey player. . Ethical issue consideration after taken the permission these questionnaires were administered individually. Participants answers were taking completely anonymous and confidential and were used only for research purpose try to answer all questions as honestly as possible. The general instruction of all scales was give separately for each participant. They were allowed asking question freely if they had regarding any item of the scale. At the end of the session participants were given the opportunity to ask question or express their experience.

Results

The purpose of the present study was “to compare the cognitive distortion male and female sportsperson”. For this purpose 37 sportsperson selections as sample in BKSP Hockey player. Purposive sampling method was used to select sample. An independent samples t-test was used to compare the mean cognitive distortion score of males (n= 17) and females (n=20) in Hockey player. The t-test was not statistically significant, with mean cognitive distortion score of females (M= 55.65, SD= 17.08), was not significantly higher (mean difference 1.47, 95% CI [-12.45, 9.51]) than the males (M=54.17, SD=15.52), $t(37) = -0.273, p < .001$.

Group Statistics					
	Sex	N	Mean	Std. Deviation	Std. Error Mean
TScore	Male	17	54.1765	15.52110	3.76442
	Female	20	55.6500	17.08885	3.82118

Independent Samples Test

	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	
TScore Equal variances assumed	1.007	.323	-.273	35	.787	-1.47353	5.40706	-12.45044	9.50338	
Equal variances not assumed			-.275	34.824	.785	-1.47353	5.36398	-12.36495	9.41789	

Discussion

The purpose of the present study was to compare the cognitive distortion male and female sportsperson. For this purpose 37 Hockey players were selected as sample in BKSP. Purposive sampling method was used to select the sample. For this study samples used to survey comparison design. Ethical issue consideration after taking the permission these questionnaires was administered individually. Participants answer will be completely anonymous and confidential and will be used only for research purpose try to answer all questions as honestly as possible. The general instruction of all scales will give separately for each participant. They will allow asking question freely if they had regarding any item of the scale. At the end of the session participant will be given the opportunity to ask questions or express their experience.

The study objective was to compare the cognitive distortion male and female sportsperson. An independent samples t-test was used to compare the mean cognitive distortion score of males (n= 17) and females (n=20) Hockey player. The t-test was not statistically significant, with mean cognitive distortion score of females (M= 55.65, SD= 17.08), was not significantly higher (mean difference 1.47, 95% CI [-12.45, 9.51]), than the males (M=54.17, SD=15.52), $t(37) = -0.273, p < .001$. The study result was supported by previous finding that the cognitive distortions and depression are influenced by gender and females were found to have higher level of cognitive distortions as well as depression than males (Maurya et al., 2016). That means female payer has more cognitive distortion than male player.

Limitation

However, the present study has also some limitations such small sample size and geographical region. It was limited to BKSP area only. Hence, research with more representative samples involving large area and varieties could reveal better understanding of the present study.

Recommendation

Need more sample for better understanding. From this result it can be recommended that female player need to increase positive thinking styles.

Conclusion

The purpose of the present study was to compare the cognitive distortion male and female sportsperson. The study objective was to compare the cognitive distortion male and female sportsperson. An independent samples t-test was used to compare the mean cognitive distortion score of males (n= 17) and females (n=20) Hockey player. The t-test was not statistically significant, with mean cognitive distortion score of females (M= 55.65, SD= 17.08), was not significantly higher (mean difference 1.47, 95% CI [-12.45, 9.51]), than the males (M=54.17, SD=15.52), $t(37) = -0.273$, $p < .001$. The study result was supported by previous finding that the cognitive distortions and depression are influenced by gender and females were found to have higher level of cognitive distortions as well as depression than males (Maurya et al., 2016). That means female payer has more cognitive distortion than male player.

References

- Beck, Aaron T. (1997). "The Past and Future of Cognitive Therapy". *Journal of Psychotherapy and Research*. 6 (4): 277. PMC 3330473. PMID 9292441.
- Beck, Aaron T. (1967). *Depression Causes and Treatment*. Philadelphia, Pennsylvania: University of Pennsylvania Press. p. 166.
- Beck, Aaron T. (1972). *Depression; Causes and Treatment*. Philadelphia: University of Pennsylvania Press. ISBN 978-0-8122-7652-7.
- Burns, David D. (1980). *Feeling Good: The New Mood Therapy*. New York: Morrow. ISBN 978-0-688-03633-1.

- Burns, David D. (1980). *The Feeling Good Handbook: Using the New Mood Therapy in Everyday Life*. New York: W. Morrow. ISBN 978-0-688-01745-3.
- Beidel, Deborah C. (1986). "A Critique of the Theoretical Bases of Cognitive Behavioral Theories and Therapy". *Clinical Psychology Review*. 6 (2): 177–97. doi:10.1016/0272-7358(86)90011-5.
- Barriga, Alvaro Q.; Morrison, Elizabeth M.; Liau, Albert K.; Gibbs, John C. (2001). "Moral Cognition: Explaining the Gender Difference in Antisocial Behavior". *Merrill-Palmer Quarterly*. 47 (4): 532–562. doi:10.1353/mpq.2001.0020. JSTOR 23093698. S2CID 145630809. Retrieved 2022-02-07.
- Diagnostic and statistical manual of mental disorders : DSM-5. American Psychiatric Association., American Psychiatric Association. DSM-5 Task Force. (5th ed.). Arlington, VA: American Psychiatric Association. 2013. ISBN 9780890425541. OCLC 830807378.
- Ellis, Albert (1957). "Rational Psychotherapy and Individual Psychology". *Journal of Individual Psychology*. 13: 42.
- Franceschi, Paul (2007). "Compléments pour une théorie des distorsions cognitives". *Journal de Thérapie Comportementale et Cognitive*. 17 (2): 84–88. doi:10.1016/s1155-1704(07)89710-2.
- Franceschi, Paul (2009). "Théorie des distorsions cognitives : la sur-généralisation et l'étiquetage". *Journal de Thérapie Comportementale et Cognitive*. 19 (4): 136–140. doi:10.1016/j.jtcc.2009.10.003.
- Franceschi, Paul (2010). "Théorie des distorsions cognitives : la personnalisation". *Journal de Thérapie Comportementale et Cognitive*. 20 (2): 51–55. doi:10.1016/j.jtcc.2010.06.006.
- Grohol, John (2009). "15 Common Cognitive Distortions". PsychCentral. Archived from the original on 2009-07-07.
- Grohol, John M. (17 May 2016). "15 Common Cognitive Distortions". PsychCentral. Retrieved 8 April 2020.
- Graham, Michael C. (2014). *Facts of Life: ten issues of contentment*. Outskirts Press. p. 37. ISBN 978-1-4787-2259-5.

- Gil, Pedro J. Moreno; Carrillo, Francisco Xavier Méndez; Meca, Julio Sánchez (2001). "Effectiveness of cognitive-behavioural treatment in social phobia: A meta-analytic review". *Psychology in Spain*. 5: 17–25. S2CID 8860010.
- Thomas, David (2010). *Narcissism: Behind the Mask*. ISBN 978-1-84624-506-0.
- Theunissen, Maurice; Peters, Madelon L.; Bruce, Julie; Gramke, Hans-Fritz; Marcus, Marco A. (2012). "Preoperative Anxiety and Catastrophizing" (PDF). *The Clinical Journal of Pain*. 28 (9): 819–841. doi:10.1097/ajp.0b013e31824549d6. PMID 22760489. S2CID 12414206.
- Helmond, Petra; Overbeek, Geertjan; Brugman, Daniel; Gibbs, John C. (2015). "A Meta-analysis on Cognitive Distortions and Externalizing Problem Behavior" (PDF). *Criminal Justice and Behavior*. 42 (3): 245–262. doi:10.1177/0093854814552842. S2CID 146611029.
- Kovacs, Maria; Beck, Aaron T. (1986). "Maladaptive Cognitive Structure in Depression". *The American Journal of Psychiatry*: 526.
- Martin, Ryan C.; Dahlen, Eric R. (2005). "Cognitive emotion regulation in the prediction of depression, anxiety, stress, and anger". *Personality and Individual Differences*. 39 (7): 1249–1260. doi:10.1016/j.paid.2005.06.004.
- Millon, Theodore; Carrie M. Millon; Seth Grossman; Sarah Meagher; Rowena Ramnath (2004). *Personality Disorders in Modern Life*. John Wiley and Sons. ISBN 978-0-471-23734-1.
- Moritz, Steffen; Schilling, Lisa; Wingenfeld, Katja; Köther, Ulf; Wittekind, Charlotte; Terfehr, Kirsten; Spitzer, Carsten (2011). "Persecutory delusions and catastrophic worry in psychosis: Developing the understanding of delusion distress and persistence". *Journal of Behavior Therapy and Experimental Psychiatry*. 42 (September 2011): 349–354. doi:10.1016/j.jbtep.2011.02.003. PMID 21411041.
- Maurya, Asit Kumar & Sharma, Payal & Asthana, Hari. (2016). *Role of Gender in Cognitive Distortions and Depression among Adolescents*.
- Maas, David F. (1997). "General Semantics Formulations in David Burns' Feeling Good". *ETC: A Review of General Semantics*. 54 (2): 225–234. JSTOR 42579774. Retrieved 2022-02-07. 1.

- Roberts, Joe. "History of Cognitive Behavioral Therapy". National Association of Cognitive Behavioral Therapists Online Headquarters. National Association of Cognitive Behavioral Therapists. Archived from the original on 2016-05-06. Retrieved 9 April 2020.
- Rush, A.; Khatami, M.; Beck, A. (1975). "Cognitive and Behavior Therapy in Chronic Depression". *Behavior Therapy*. 6 (3): 398–404. doi:10.1016/S0005-7894(75)80116-X.
- Siddika US and KUA Chowhury 2013. Development of a scale for assessing cognitive distortions. M. Phil dissertation, Department of Clinical Psychology, University of Dhaka, Dhaka. 0
- Tagg, John (1996). "Cognitive Distortions". Archived from the original on November 1, 2011. Retrieved October 24, 2011.

A Psychological case study of a cricket player during ACL injury rehabilitation

Joy Saha

Physiotherapist

Bangladesh Krira Shikkha Protisthan, (BKSP)

Dhaka. Bangladesh.

Email: dr.joysaha.pt@gmail.com



Abstract

Injured athletes may become frustrated with their setbacks and experience of mental distress, which may become a mental obstacle even during rehabilitation that causes underperformance. The purpose of this case study was to investigate the emotional factors and bio-psycho social model used by a cricket player during rehabilitation from anterior cruciate ligament (ACL) injury. To explore the athlete's emotion and self-confidence during rehabilitation and reviewing a case of ACL injury according to the bio-psycho-social model. Despite including in this study some specific literature review synopsis and also demonstrate about a single case- study with bio-psycho social model. Investigator observed that the athlete's quality of life improved after undergoing the whole program of rehabilitation and psychological counselling. This study looked at the social contexts, social agents, challenges, information sources, and reasons for male athletes with injuries to participate in sports. The factors influencing rehabilitation are overthinking about career, low economic status, long term rehab program. The athlete's quality of life improved after undergoing the whole program of rehabilitation and psychological counseling.

Key word: ACL injury, psychological impact, ACL rehab

Introduction

Sport injuries are a common and known risk of competitive athletics. As competition becomes fiercer and fiercer, young athletes often suffer physical pains due to inadequate warmups, excessive training, and encountering unfair plays; they also suffer emotional pains as the competitive nature of sports creates stressful situations in high-stakes games

Although athletes expect the pains of physical sport injury and rehabilitation, most underestimated, if even anticipated, the negative emotional and self-confidence effects of injury (Bianco, T., Malo, S., & Orlick, T. 1999). Investigations into collegiate athletes' psychological response to sports injury and rehabilitation find that injury often leads to negative psychological reactions. Many athletes struggle with underperformance after injury and have difficulties in improving performance to their pre-injury levels (Petitpas & Danish, 1995). Injured athletes show lower self-esteem and experience emotional distress at both the onset of injury and during the rehabilitation period (Clement & Shannon, 2011; Leddy, Lambert, & Ogles, 1994; Tracey, 2003). Injury may cause re-injury, a temporary or permanent decrease in sports performance, and a negative emotional impact, including anxiety, depression, and decreased self-esteem (Rotella and Heyman 1986). As the knee moves back and forth through flexion and extension, there is an increase in the tightening and loosening of these fibers. The posterolateral part of the ACL is taut in extension and the anteromedial portion is lax. In flexion, all the fibers except the anteromedial portion are lax (Norris, 1997). Psychological skills training (PST) refers to the "techniques and strategies designed to teach or enhance mental skills that facilitate performance and a positive approach to sport competition" (Vealey, 1988). Imagery is a process in which athletes

mentally simulate a successful sporting event activity or task, such as throwing curve ball, but is focused on making the perceptual experience life-like, using all senses. When used during a game, imagery can keep an athlete's focus on the elements of successfully completing the task during a game; thus, enhancing sport performance (Gould & Weinberg, 1995; Hall, Munroe- Chandler, Cumming, Law, Ramsey, & Murphy, 2009; Hardy, Jones, & Goud, 1996). The player presented in this study received a full ACL reconstruction operation. An MRI scan revealed that there was a detachment of the ACL from the femoral insertion. It also revealed that there was a slight sprain seen in the lateral collateral ligament, but no damage to menisci. During the surgical procedure it was discovered that there was a rupture of the posterolateral bundle, therefore the surgeon elected to reconstruct the ligament. A graft was taken from the patella tendon to replace the previous ruptured ligament. Post operation the participant was advised to commence full weight bearing using crutches for the following three weeks with an emphasis on full active extension as soon as possible.

Although research has shown that pre-existing differences in self-efficacy are associated with variability in recovery, it is less clear whether proactively managing emotional states and increasing self-efficacy of injured athletes could serve a protective mechanism or facilitate successful rehabilitation. Researchers have found that severely injured college athletes viewed strong social support received from athletic trainers as a major determinant of their beliefs about rehabilitation success (Bone & Fry, 2006).

In addition to providing an objective standard for measuring one's performance over time, goal setting is the foundation for affective responses in sports performance, leading to positive impact on self-satisfaction when one achieves goals, and to disappointment and negative affect at goal failure. Further, four factors, including ability, motivation, knowledge, and skills, mediate the motivational and affective effects of goals on performance. Research on goal setting in the sports domain demonstrated that athletes who adjusted goals based on unstable factors, such as current performance, effort, or obstacles, engaged in greater goal changing during the season than athletes who had realistic goals based upon stable factors, such as one's overall ability (Donovan & Williams, 2003). Locke and Latham (2006) also identified four moderators of the goal-setting process, including feedback, commitment, task complexity, and situational constraints. In athletic training, setting short-term realistic goals is one of the top three psychological strategies athletic trainers used with their athletes (Clement et al., 2013).

As the player was a trainee of BKSP this allowed access to BKSP medical center, which is where a lot of the rehabilitation took place.

To explore the athlete's emotion and self-confidence during ACL injury rehabilitation and reviewing a case of ACL injury according to the bio-psycho-social model.

Objectives of the study:

- a. Observing athlete's psychological status during rehabilitation.
- b. Reviewing relevant good quality articles.
- c. Reviewing a case of ACL injury.
- d. Describing the case according to the bio-psycho-social model.

Literature Review

The research titled “Athletes Emotion and Self-Confidence under Sport Injury Rehabilitation with Sports Counseling” was authored by Jungun Park, Taihyeup David Yi and Sungick Min was published in the “Journal of Multidisciplinary Research”. The study was aimed to examine the effects of PST and sports counseling on athletes' affective states, cognitions, and self-confidence under sport injury rehabilitation. As for the design, the study was between-subjects, single factor pre-test and post-test and follow-up experimental design to examine the research question. The independent variable, treatment type, consisted of the following levels: treatment-as-usual (TAU) control, sport psychology skills training (PST) experimental group, and PST plus sports counseling (SC) experimental group. They conducted this study over the five-month period, consisting of a 5-week rehabilitation period between the pre-test and post-test, then a follow-up test conducted three months after the post-test. The Profile of Mood States (POMS) that is a 65-item questionnaire to assess fluctuations in affective states, specifically six mood dimensions: tension-anxiety, depression-rejection, anger-hostility, vigor-activity, fatigue inertia, and confusion-bewilderment. Our participants completed 58 items pertaining to the six subscales (i.e., the five negative subscales of tension (9 items), depression (15 items), anger (12 items), fatigue (7 items), and confusion (7 items); and the one positive subscale of vigor (8 items)) each week over the five-week study period. Seven of the 65 items are not classified in the six subscales, so we did not include them in the questionnaire of this study. Scores for each item range from 0 (‘Strongly disagree’) to 4 (‘Strongly agree’) based on a five-point Likert-type scale. We calculated the total for each of the six subscales. In addition, we used another subscale, Total Mood Disturbance (TMD), which is the sum of 100 plus the five negative affect subscale scores minus the positive subscale score. After participants completed the pre-test questionnaires of the POMS, CSAI-2, and SSCQ, we began the treatment programs. We ran a total of ten program sessions within each treatment group, occurring twice weekly over the five-week period between pre-test and posttest. They completed all measures during the follow-up testing session three months after the posttest period. The PST and SC groups ran 30 and 40 minutes for each session, respectively. They examined descriptive statistics and performed tests of our a priori hypotheses using SPSS ver. 19.0. Due to the small sample size, we employed non-parametric tests both to compare treatment groups within each testing period and to compare changes in groups across the pre, post, and follow-up tests. We used the

Kruskal-Wallis and Mann-Whitney tests to compare SC, PST, and TAU scores of emotions and self-confidence within each testing period and the Friedman and Wilcoxon sign rank tests to assess change across the pre, post, and follow-up testing periods for each treatment group. Overall compared with CGT 4 weeks of REAER was associated with large improvements in functional mobility. The Kruskal-Wallis test showed that the SC, PST, and TAU were not significantly different at the 5% level of significance in the feelings for the six subscales and the total score at the pre, post, and follow-up testing periods. Using the Friedman test, we next examined whether scores for the six subscales of the POMS and the TMD score overall changed over the pre-, post-, and follow-up test periods. These findings show importance of sports counseling in a sense that when we provide athletes under sport injury rehabilitation with sports counseling as well as sport psychology, they would feel more emotionally supported and enhance self-confidence.

The research titled “ACL injury Rehabilitation: A Psychological Case Study of a Professional Rugby Union Player” was authored by Fraser Carson and Remco CJ Polman was published in the “Journal of Clinical Sports Psychology”. The aim of this case study was to investigate the emotional factors and coping strategies used by a professional rugby union player during rehabilitation from anterior cruciate ligament (ACL) injury. A dominant (qualitative) – less dominant (quantitative) mixed methodological approach was established concurrent with the athlete's rehabilitation. Twice monthly interviews and a self-report diary were completed throughout the rehabilitation process. Six questionnaires were used to assess specific aspects of injury rehabilitation identified from previous literature, including emotional response, coping, social support, and perceived autonomy. Content analysis of each phase of the rehabilitation process established 34 higher-order themes split into two general dimensions: Influential Emotions or Coping Strategies. Findings highlight the benefit of problem-focused coping to improve autonomy and confidence. A sequential movement through a series of emotions (shock, depression, relief, encouragement, and confidence building) was also identified.

The research titled “Psychological Rehabilitation from Anterior Cruciate Ligament-Medial Collateral Ligament Reconstructive Surgery: A Case Study” was authored by Siobhain McArdle was published in the “Sports Health”. Research has shown that some of the more common psychological responses to injury (ie, depression, anger, anxiety) are amplified in cases of traumatic injury. The purpose of the study was an 18-year-old male scholarship soccer player who, owing to a perceived deliberate injurious tackle by an opposition player, tore the medial collateral ligament and anterior cruciate ligament of his right knee. The study design was retrospective case report. The result shows that various personal and situational factors can compound negative psychological response to injury. A number of extreme responses are explored, including posttraumatic stress, depression, and fear of reinjury. Practitioners should be willing and able to facilitate referral in the instance of more extreme psychological response to anterior cruciate ligament injury.

Case Study

A 20-year-old male named Ashik bowling on center wicket suddenly fall down. He felt pain and difficulties to flexion & extension movement at his left knee joint. His coach took him at medical center of BKSP and after examination the medical center authority give him PRICE management for three days. After three days Physio took some special test such as Anterior dower test for ACL, Posterior dower test for PCL, Lachman test for ACL, McMurray test for meniscal tear. After investigation he said that the provisional diagnosis is ACL complete tear and he also suggested that go to MRI for the confirmation. In MRI film seeing the physician informed the left ACL complete tear and he must need surgery. Within two months he done his ACL reconstruction surgery. After 3day bed rest he started optimum loading training. When physio described the whole rehab program after the surgery, he became overcloud because the rehab program running 8 to 9 months. He also overthinking about his injury and related with his career.

BIO-Psycho Social model Biological/Physical Factors:

On examination, it was found that the patient had limited range of motion left knee joint. During active movement: Knee flexion was limited by 120 degrees and not full extension. When he slow walking, he felt knee joint was forward slip. He had no limitation in ROM in hip and ankle joint. He had poor static and dynamic balance in standing.

Psychological Factors:

While the assessment was in progress, the patient also described his current situation. He is very depressed about his current situation as he required additional support to go to the toilet and needs help to ADL. He felt helpless because his family member was not present here. He also overthinking about his injury and related with his career. For that reason, he became depressed and sad. Because of his low economic status his family suffer to arrange the surgery money. That was another negative impact on his mind. When physio described the whole rehab program after the surgery, he became overcloud because the rehab program running 8 to 9 months.

Social Factors:

As the patient was asked about his activities at home, he described that he had been avoiding social gatherings after his injury. He even stopped going out for training as his friends shows sympathy of his loss. Also, they continuously remind him of his past situation which hurts him mentally. He had the opportunity to back on the field. Though BKSP stuff is supportive, he avoided attending cultural program held on BKSP.

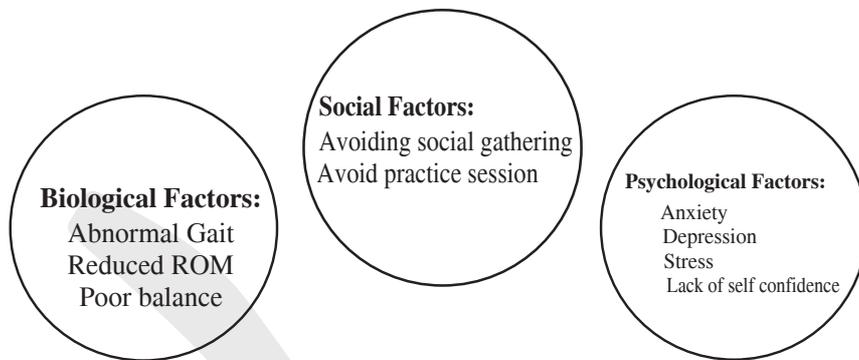


Figure-1: Bio-psycho social model for the current case.

Rehabilitation Program for the case:

Phase 1 (Week 1-3)

Following surgery, it is important to correct any difficulties in gait pattern. The initial phase of the rehabilitation process based on gait training and regaining functional control of the quadriceps. This was followed by walking on an anti-gravity treadmill starting at 45% body weight for 5 minutes 2-3 times per week, progressing to 65% bodyweight for 10 minutes 3-5 times per week by the end of week three. Start isometric exercise like as- press the pillow, press heel with knee 100-degree flexion.

Phase 2 (Week 3-6)

This phase of rehabilitation was focused on full soft end feel flexion and firm extension to stop. Improving single leg load tolerance with the end goal of this stage being able to perform 10 squats to 30° knee flexion, without pain. Exercises included core and hip stability and strengthening of the calves. The volume generally consisted of 3-4 sets of 15-20 reps per exercise daily. Start balance and co-ordination training.

Phase 3 (Week 6-12)

The main goal at this stage was to regain strength to normal, and full range of motion. An isokinetic dynamometer was used to compare quad/hamstring strength ratio with injured and non-injured leg. Strength training volumes were increasing to 6 sets of 8-12 reps on each exercise. Walking continued on the anti-gravity treadmill, increasing volume to 20 to 30-minute sessions 2-3 times per week.

Phase 4 (Week 12+)

This phase is based on strength training. Strength training increased from week 12 onwards, increasing single leg strength further through closed kinetic chain exercises such as squat and single leg squat. Slowly began Ballistic exercises to be introduced such as stationary

and forward hopping. Leg balance exercises on a Bosu ball. Running continued in a straight line, and gradually progressed to multi-direction and acceleration/deceleration and more sport specific movements like as- zig zag movement, Suttle run.

Psychological Counselling:

Although athlete does not always feel it is necessary for consultants to have participated in his sport, he do expect consultants to possess a general understanding of the sport experience and the sport environment. This particular involves working with athletes in different settings and under different circumstances. In this case meditation helps to overcome the depression stage and motivational speech helps to mentally strong.

Discussion

To investigate the emotional factors and bio-psycho social model used in this case and finding that he has low self-confidence, anxiety and depression. He is very depressed about his current situation as he required additional support to go to the toilet and needs help to ADL. He felt helpless because his family member was not present here. He also overthinking about his injury and related with his career. For that reason, he became depressed and sad. Because of his low economic status his family suffer to arrange the surgery money. That was another negative impact on his mind. When physio described the whole rehab program after the surgery, he became overcloud because the rehab program running 8 to 9 months. As the patient was asked about his activities at home, he described that he had been avoiding social gatherings after his injury. He even stopped going out for training as his friends shows sympathy of his loss. Also, they continuously remind him of his past situation which hurts him mentally. He had the opportunity to back on the field. Though BKSP staff is supportive, he avoided attending cultural program held on BKSP.

Research on competitive state anxiety is one of the leading areas in sport psychology (Woodman & Hardy, 2001). The CSAI-2 subscale post-test between the three groups showed that somatic anxiety and self-confidence scores were significantly improved for SC compared to PST and TAU. These findings show importance of sports counseling in a sense that when we provide athletes under sport injury rehabilitation with sports counseling as well as sport psychology, they would feel more emotionally supported and enhance self-confidence.

A Retrospective case report by Heil J, (2000) suggested that when an injury results from an intent to do harm, especially in conjunction with a rule violation or when the behavior of the offender goes unpunished, the psychological response of the injured athlete is more likely to be extreme.

Rotella and Heyman (1986) assert that injury may cause re-injury, a temporary or permanent decrease in sports performance, and a negative emotional impact, including anxiety, depression, and decreased self-esteem.

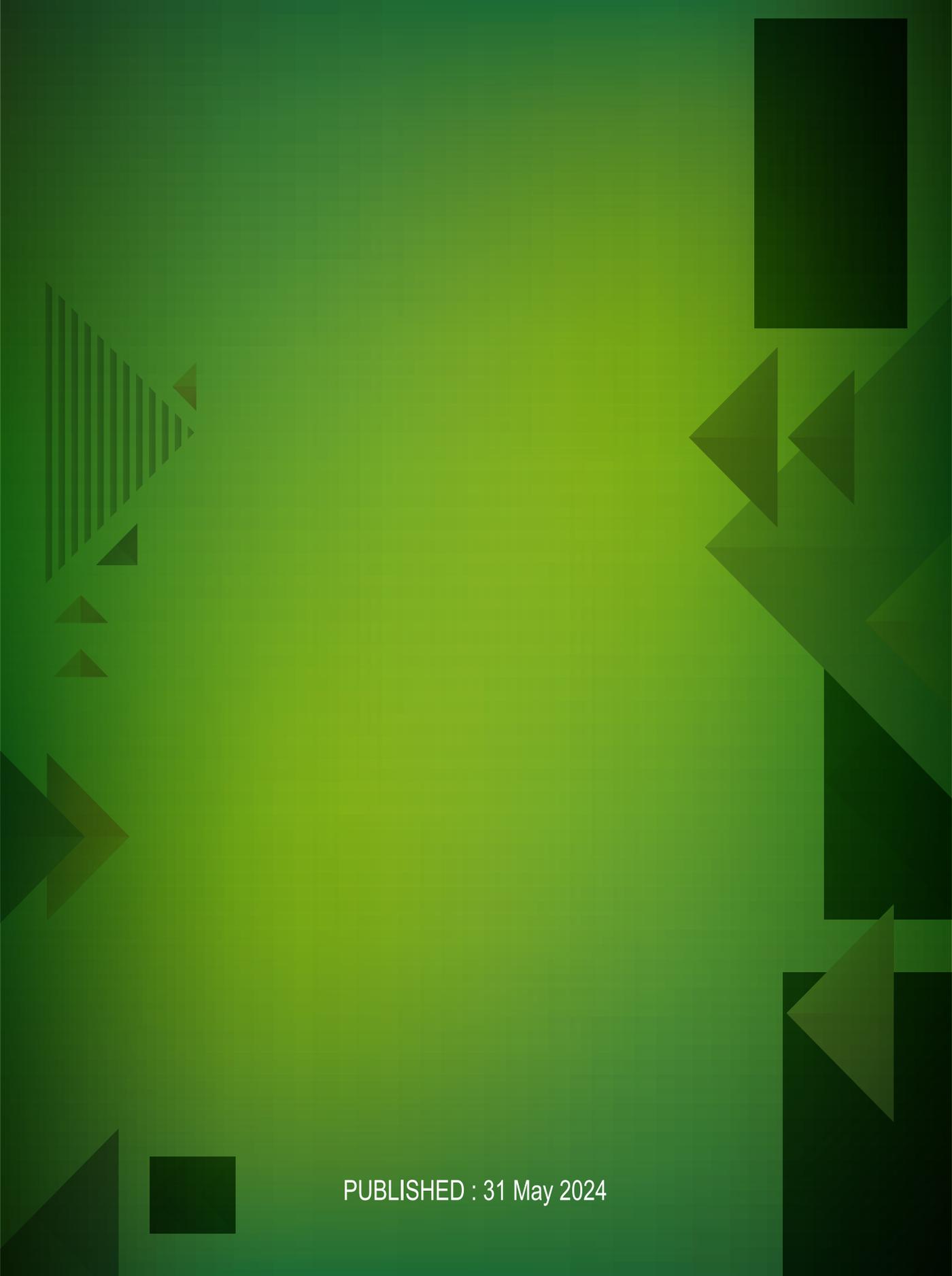
Conclusion

This study looked at the social contexts, social agents, challenges, information sources, and reasons for male athletes with injuries to participate in sports. The factors influencing rehabilitation are overthinking about career, low economic status, long term rehab program. The athlete's quality of life improved after undergoing the whole program of rehabilitation and psychological counselling. These findings show importance of sports counseling in a sense that when we provide athletes under sport injury rehabilitation with sports counseling as well as sport psychology, they would feel more emotionally supported and enhance self-confidence. the athlete's quality of life improved after undergoing the whole program of rehabilitation and psychological counselling.

Reference

- Woodman, T., & Hardy, L. (2001). A case study of organizational stress in elite sport. *Journal of Applied Sport Psychology*, 13(2), 207-238. <https://doi.org/10.1080/104132001753149892>
- Heil J. The injured athlete. In Hanin YL, ed. *Emotions in Sport*. Champaign, IL: Human Kinetics; 2000:245-267. Rotella, R. J., & Heyman, S. R. (1986). Stress, injury, and the psychological rehabilitation of athletes. In J. M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance*, 343–364, Palo Alto, CA: Mayfield.
- Jungun Park, Taihyeup David Yi and Sungick Min (2022). *Journal of Multidisciplinary Research*, Vol. 14, No. 1, 37–54. ISSN 1947-2900.
- Siobhain McArdle, PhD (2009). Psychological Rehabilitation from Anterior Cruciate Ligament-Medial Collateral Ligament Reconstructive Surgery: A Case Study. *American Orthopaedic Society for Sports Medicine*, Volume 2, Issue 1. <https://doi.org/10.1177/1941738109357173>
- Norris, C.M. (1997) *Sports injuries: Diagnosis and management*. 2nd edn. Oxford: Butterworth-Heinemann.
- Busfield BT, Kharrazi FD, Starkey C, Lombardo SJ, Seegmiller J. (2009) Performance outcomes of anterior cruciate ligament reconstruction in the National Basketball Association. *Arthroscopy*. (8):825-30.
- Roos H, Ornell M, Gardsell P, et al. (1995) Soccer after anterior cruciate ligament injury: an incompatible combination? A national survey of incidence and risk factors and a 7-year follow-up of 310 players. *Acta Orthop Scand*; 66:107–12.

- Bianco, T., Malo, S., & Orlick, T. (1999). Sport injury and illness: Elite skiers describe their experiences. *Research Quarterly for Exercise and Sport*, 70(2), 157–169. <https://doi.org/10.1080/02701367.1999.10608033>.
- Petipas, A., & Danish, S. (1995). Caring for injured athletes. In Murphy (Ed.), *Sport psychology interventions*, 255–281. Champaign, IL: Human Kinetics.
- Clement, D., & Shannon, V. R. (2011). Injured athletes' perceptions about social support. *Journal of Sport Rehabilitation*, 20(4), 457–470. <https://doi.org/10.1123/jsr.20.4.457>.
- Leddy, M. H., Lambert, M. J., & Ogles, B. M. (1994). Psychological consequences of athletic injury among high-level competitors. *Research Quarterly for Exercise and Sport*, 65(4), 347–354. <https://doi.org/10.1080/02701367.1994.10607639>.
- Vealey, R. S. (1988). Future directions in psychological skills training. *The Sport Psychologist*, 2(4), 318–336. <https://doi.org/10.1123/tsp.2.4.318>.
- Gould, D., & Weinberg, R. S. (1995). *Foundations of sports and exercise psychology*. Champaign, IL: Human Kinetics.
- Hall, C. R., Munroe-Chandler, K. J., Cumming, J., Law, B., Ramsey, R., & Murphy, L. (2009). Imagery and observational learning use and their relationship to sport confidence. *Journal of Sports Sciences*, 27(4), 327–337. <https://doi.org/10.1080/02640410802549769>.
- Hardy, L., Jones, G., & Gould, D. (1996). *Understanding psychological preparation for sport: Theory and practice of elite performers*. John Wiley & Sons.

The background is a gradient of green, transitioning from a darker shade at the top to a lighter shade at the bottom. It is decorated with various geometric shapes in different shades of green and black. On the left side, there is a series of vertical lines that form a triangular shape pointing to the right. Below this, there are several smaller triangles and a larger arrow pointing to the right. On the right side, there is a large black rectangle at the top, followed by several overlapping triangles and a large arrow pointing to the left. At the bottom left, there is a black square. At the bottom center, the text "PUBLISHED : 31 May 2024" is written in white.

PUBLISHED : 31 May 2024