



P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (RJIF): 5.38
IJPESH 2024; 11(2): 283-287
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<https://www.kheljournal.com>
Received: 03-03-2024
Accepted: 09-04-2024

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To observe the impact of menstrual cycle on sports performance and psychological aspects of karate playing girls

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Abstract

Karate is a sport that requires flexibility, strength, agility and self-control it is a sport much popular and practiced all over the world, hence it is also popular among the female as a means of self-defense and to built stamina. Just as all the other sports the karate also has some impact on the menstruation in women hence this study aims to observe the performance in karate practicing girls on normal and during the days of menstruation.

Aim: The study aimed to observe the impact of menstruation as well as psychological aspect on the sports performance among female karate practitioners.

Methods: 131 Karate playing girls during menstruation and not during menstruation phases were observed for the impact of physical performance as well as psychological impact in both phases. Further, physical performance was observed through 5. RATING SCALE and psychological impact was observed through DASS 21.

Conclusion: In conclusion, the menstrual cycle and its influence on athletes are multifaceted, affecting both physiological and psychological aspects of performance. The data reflects the importance of considering these factors in the training and management of female athletes to optimize performance and well-being. Ongoing research in this area is crucial for developing evidence-based recommendations and support systems for female athletes across all levels of competition.

Keywords: Menstrual cycle, sports performance, psychological aspects

1. Introduction

Karate originated in the Ryukyu Islands, particularly on Okinawa Island. It developed among the pechin class; it was called "te." Although associated with Japan, karate isn't exclusively Japanese. Early 20th-century Japanese regarded it as a peasant art distinct from old school martial arts. Karate is practiced in various styles like Shotokan, GojuRyu, Kyokushinkai, and WadoRyu. Emphasizing strength and precision, karate involves punches, kicks, and elbow strikes within sport rules. Menstruation is a normal physiological phenomenon which occurs in female reproductive system. The menstrual cycle typically lasts 28 days, although it can vary from person to person. It often involves anatomical and physiological changes in the body. Anaerobic and aerobic performance, muscular strength seems more likely to be affected by menstrual cycle phase.

2. Materials and Methods

131 Karate playing girls during menstruation and not during menstruation phases were observed for the impact of physical performance as well as psychological impact in both phases. Further, physical performance was observed through 5. RATING SCALE and psychological impact was observed through DASS 21.

2.1 Subheadings

1. Introduction.
2. Review of literature.
3. Material and methodology.
4. Result and analysis.

5. Discussion and conclusion.

3. Result and Discussion

3.1 Result

The study compared the performance and psychological well-being of 131 participants during menstruation and non-menstruation phases. Results showed: The data suggests that performance ratings are generally lower during menstruation, although there is variability among individuals. There were higher levels of depression, anxiety, and stress reported during menstruation compared to non-menstruation periods.

3.2 Discussion

The study aimed to observe the impact of menstrual cycle on sports performance and psychological aspects of karate-playing girls. The results showed that the participants had lower scores on the performance scale and higher scores on the depression, anxiety, and stress scales during their menstrual phase compared to their normal phase. These findings imply that the menstrual cycle adversely affects the physical and mental health of female karate athletes.

3.3 Tables and Figures

Table 1: Analyses of sports performance and DASS21

Name	Total/N	Minimum	Maximum	Mean	Standard Deviation
Performance scale during menstruation	131	1	5	3.3	0.81
performance scale normal	131	2	5	3.76	0.842
depression menstruation d	131	0	15	6.1	3.794
anxiety menstruation a	131	0	17	4.81	4.199
stress menstruation s	131	0	17	6.44	3.989
depression normal d	131	0	12	2.92	2.743
anxiety normal a	131	0	13	2.36	2.643
stress normal s	131	0	16	3.09	3.129

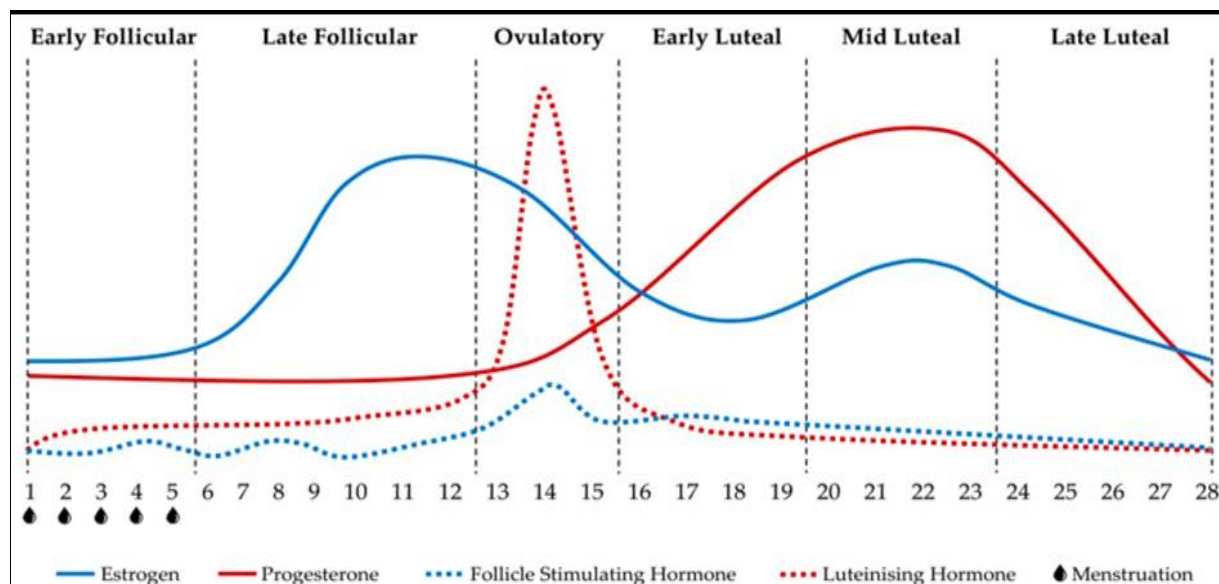
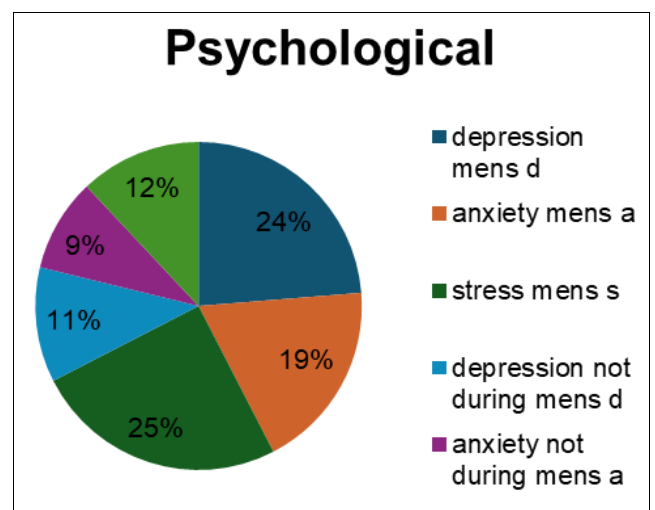


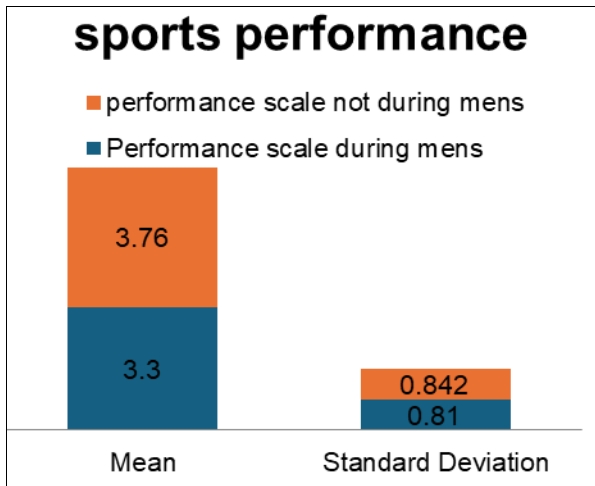
Fig 1: The follicular phase



Fig 2: A, B data collection



Graph 1: psychological impact on karate performance girls in both phases of the Menstruation cycle



Graph 2: Sports performance impact on karate performance girls in phases of the menstrual cycle

4. Conclusion

In conclusion, the menstrual cycle and its influence on athletes are multifaceted, affecting both physiological and psychological aspects of performance. The data reflects the importance of considering these factors in the training and management of female athletes to optimize performance and well-being. Ongoing research in this area is crucial for developing evidence-based recommendations and support systems for female athletes across all levels of competition.

5. Acknowledgments

First and foremost, all our praises and thanks to God, the almighty for showering his blessing throughout the work period of our research to help us complete the research successfully. We are extremely grateful to our parents for their motivation, efforts blessings love and sacrifices for educating and preparing us for our better future, we are also thankful to our siblings for their supporting nature and valuable prayers.

We would also like to show our gratitude towards S.S Agrawal institute of physiotherapy and medical care education for sharing their abundant coordination, cooperation and support to us during our research.

We would like to express our special gratitude to our I/C principal DR. Shlesha Vaidya (MPT orthopedics) for providing the golden opportunity to us in performing the research through which we are introduced with so many educative new things.

We would like to express our sincere gratitude to our guide Dr. Bhumika Bhadarka MPT (Musculoskeletal & sports) for her incessant support in research and her patience, motivation, enthusiasm, and immense knowledge that she provided us during the research. Her guidance assisted us throughout the time of research and in writing our research. Her guidance assisted us throughout the time of research and in writing our research. We express our heartfelt gratitude towards her.

Our sincerest thanks are extended to our Dr. Vicky Kasundra, Dr. Priya Shah and Dr. Priya Panchal for their encouragement and guidance whenever needed during the research.

We are grateful to our subject who participated enthusiastically and cooperated throughout the intervention.

We are lucky for having such research colleagues who had been constantly helpful throughout this entire study

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Appendix Consent Form

I-----hereby agree to take part for dissertation work of Ms. Jainy patel, Ms. Ruchika aswani, Ms. Tinkal patel, Ms. Shruti patel, Ms. Zeba Kalyani titled "TO OBSERVE THE IMPACT OF MENSTRUAL CYCLE AND PSYCHOLOGICAL ASPECT ON SPORTS PERFORMANCE AMONG KARATE PLAYING GIRLS" The possible benefit of study as well as procedure and duration of study have been explained to me. The question and queries I have posed have been answered to my satisfaction and I am aware that my identity will be kept confidential and I can discontinue the study at any time I wish to do so.

Place:
Date:
Signature of participant:
Signature of examiner:

Assessment Form:
Name:
Age:
Address:
Contact no:
Occupation:
Belt:
Last menstruation period:

Scales Score
Normal During menstruation
DASS 21
Performance score
DASS21
Name: Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no rights or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all

- 1) Applied to me to some degree, or some of the time
- 2) Applied to me to a considerable degree or a good part of time
- 3) Applied to me very much or most of the time
1. (s) I found it hard to wind down 0 1 2 3
2. (a) I was aware of dryness of my mouth 0 1 2 3
3. (d) I couldn't seem to experience any positive feeling at all 0 1 2 3
4. (a) I experienced breathing difficulty (e.g. excessively rapid breathing, Breathlessness in the absence of physical exertion) 0 1 2 3
5. (d) I found it difficult to work up the initiative to do things 0 1 2 3
6. (s) I tended to over-react to situations 0 1 2 3
7. (a) I experienced trembling (e.g. in the hands) 0 1 2 3
8. (s) I felt that I was using a lot of nervous energy 0 1 2 3
9. (a) I was worried about situations in which I might panic and make a fool Of myself 0 1 2 3
10. (d) I felt that I had nothing to look forward to 0 1 2 3
11. (s) I found myself getting agitated 0 1 2 3
12. (s) I found it difficult to relax 0 1 2 3
13. (d) I felt down-hearted and blue 0 1 2 3
14. (s) I was intolerant of anything that kept me from getting on with what I Was doing 0 1 2 3
15. (a) I felt I was close to panic 0 1 2 3
16. (d) I was unable to become enthusiastic about anything 0 1 2 3
17. (d) I felt I wasn't worth much as a person 0 1 2 3
18. (s) I felt that I was rather touchy 0 1 2 3
19. (a) I was aware of the action of my heart in the absence of physical Exertion (e.g. sense of heart rate increase, heart missing a beat) 0 1 2 3
20. (a) I felt scared without any good reason 0 1 2 3
21. (d) I felt that life was meaningless 0 1 2 3

DASS-21 Scoring Instructions

The DASS-21 should not be used to replace a face to face clinical interview. If you are experiencing significant emotional difficulties you should contact your GP for a referral to a qualified professional.

Depression, Anxiety and Stress Scale - 21 Items (DASS-21)

The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress.

Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphasia, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic nonspecific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable /over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items.

The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 development was based

(and which was confirmed by the research data) is that the differences between the depression, anxiety and the stress experienced by normal subjects and clinical populations are essentially differences of degree. The DASS-21 therefore has no direct implications for the allocation of patients to discrete diagnostic categories postulated in classificatory systems such as the DSM and ICD.

Recommended cut-off scores for conventional severity labels (normal, moderate, severe) are as follows:

NB Scores on the DASS-21 will need to be multiplied by 2 to calculate the final score.

Depression Anxiety Stress

Normal 0-9 0-7 0-14

Mild 10-13 8-9 15-18

Moderate 14-20 10-14 19-25

Severe 21-27 15-19 26-33

Extremely Severe 28+ 20+ 34+

LoBiondo, S.H. & LoBiondo, P.F. (1995). Manual for the Depression Anxiety & Stress Scales. (2nd Ed.)Sydney: Psychology Foundation.