

## **DECLARATION BY THE CANDIDATE**

I hereby declare that the thesis entitled, "A CRITICAL STUDY OF NUTRITIONAL KNOWLEDGE AND PRACTICES AMONG THE WRESTLERS IN MAHARASHTRA" submitted by me for the degree of Doctor of Philosophy (Physical Education) is the record of work carried out by me under the guidance of **Dr. B. R. Himalayan** and this thesis has not formed the basis for the award of any degree, diploma, associateship, fellowship, titles in this or any other University or other institution of Higher learning.

I further declare that the material obtained from other sources has been duly acknowledged in the thesis.

**April, 2012**

---

Signature of the Candidate  
**(NETAJI MARUTI JADHAV)**

## **CERTIFICATE OF THE GUIDE**

This is to certify that the work incorporated in the thesis entitled " **A Critical Study of Nutritional Knowledge and Practices Among the Wrestlers in Maharashtra**" submitted by **Mr. Jadhav Netaji Maruti** was carried out by the candidate under my supervision in the **Bharati Vidyapeeth's College of Physical Education, Pune - 411 043**, for the degree of **Doctor of Philosophy (Physical Education)**. The research work done by him is his original work.

**MR. JADHAV NETAJI MARUTI** has worked under my supervision for the required period as per the ordinances. The Thesis is satisfactorily from the language point view and presentation of subject matter is logical and sequential. The content of the thesis, in full or parts have not been submitted to any other Institute or University for the award of any other degree or diploma. As per rule I am forwarding the same to the Bharati Vidyapeeth Deemed University, Pune for evaluation.

**April, 2012**

---

Signature of Research Guide  
**(DR. B. R. HIMALAYAN)**

## **ACKNOWLEDGEMENT**

It is a matter of great honor for me to thank all those for their encouragement, advice and support that made this research possible.

I will always be indebted to my Ph.D. guide, Dr. B. R. Himalayan who is constant source of inspiration and ideas. His encouragement, advice and expertise has made this research exercise, a truly, learning one.

My deep gratitude to Dr. T. K. Bera, Principal, Bharati Vidyapeeth's College of Physical Education, Dhankawadi, Pune, Maharashtra, for his valuable guidance, logical criticism and scientific approach to complete this investigation.

I am grateful to Dr. V. L. Lekawale and Dr. S. A. Sonawane, Head, Department of Education, University of Pune, Pune, for their valuable suggestions and encouragement to complete this study.

I am grateful to my parents, family members and friends for their continued inspiration, moral support and encouragement during the research study.

Cooperation extended by all the wrestlers, wrestling coaches and head of Akharas where this study was conducted, is thankfully acknowledged.

**February, 2012**

**(JADHAV NETAJI MARUTI)**

## TABLE OF CONTENTS

	<b>Page</b>
Declaration	i
Certificate of Guide	ii
Acknowledgement	iii
List of Tables	vii
List of Figures	viii
List of Appendices	ix
<b>CHAPTER</b>	
<b>I. INTRODUCTION</b>	<b>PAGE</b>
	1
1.1 Preamble	1
1.2 Brief About Wrestling	3
1.2.1 Historical Background of Wrestling	4
1.2.2 Types of Wrestling	5
1.2.3 Wrestling in India	5
1.2.4 Scenario of Wrestling in Maharashtra	9
1.3 Importance of Nutrition in Wrestling ...	15
1.4 Nutrition Requirement of Wrestlers ...	28
1.4.1 CHO Loading & Effect of Poor CHO Diet CHO Loading	30
1.4.2 Concept of High Protein & High Fat Diet.	32
1.4.3 Pre Competition & After Competition	33

1.4.4 Fluid Replenishment & Glycemic Index				
Fluid Replenishment	...	...	...	35
1.5 Statement of the Problem	...	...	...	36
1.6 The Problem & Its Relevance	...	...	...	39
1.7 Objectives of the Study	...	...	...	41
1.8 Hypotheses	...	...	...	42
1.9 Delimitation of the Study	...	...	...	42
1.10 Limitations of the Study	...	...	...	43
1.11 Significance of the Study	...	...	...	43
1.12 Operational Definitions of Terms Used	...	...	...	44
<b>II. REVIEW OF RELATED LITERATURE...</b>	...	...	...	46
<b>III. METHODOLOGY</b>	...	...	...	89
3.1 Research Design	...	...	...	89
3.2 Method	...	...	...	89
3.2.1 Population	...	...	...	89
3.2.2 Method of Development of Questionnaire	...	...	...	90
3.2.3 Method of Survey	...	...	...	93
3.3 Statistical Analysis	...	...	...	94

<b>IV. RESULTS AND INTERPRETATION...</b>	...	...	96
4.1 Results on Questionnaire Development	...	...	96
4.1.1 Results on Preliminary Phase-I	...	...	96
4.1.2 Results on Middle Phase-II	...	...	97
4.1.3 Results on Final Phase-III	...	...	99
4.2 Results of Survey on Questionnaire ...	...	...	104
4.2.1 Results on Knowledge of Nutrition of the Wrestlers	...	...	104
4.2.2 Result on Status of Wrestler's Calorie Intake	...	...	111
4.3 Discussion	...	...	122
<b>V. SUMMARY CONCLUSION AND RECOMMENDATION</b>	...	...	126
5.1 Summary	...	...	126
5.2 Conclusion	...	...	128
5.3 Recommendation	...	...	129
5.4 Contribution of the Knowledge	...	...	130
<b>REFERENCES</b>	...	...	131
<b>APPENDICES</b>	...	...	138

## LIST OF TABLES

<u>TABLE</u>		<u>PAGE</u>
4.1	Test-Retest Reliability of the Questionnaire (Dimension-wise) ... ..	97
4.2	Values of Item-Difficulty Index and Item-Discrimination (Dimension-wise) ... ..	98
4.3	Characteristics of Distribution of Scores Obtained by the Subjects in the Questionnaire (Knowledge of Nutrition & its Practices for Wrestlers) ... ..	102
4.4	Percentile Norms of the Questionnaire (Knowledge of Nutrition & its Practices For Wrestlers) ... ..	103
4.5	Grading Scale of Performance in the Questionnaire (Knowledge of Nutrition & its Practices for Wrestlers) ... ..	104
4.6	Status of Knowledge on Nutrition of Wrestlers in Maharashtra ... ..	105
4.7	Status (%) of Wrestlers Knowledge on Nutrition & its Practices ... ..	107
4.8	Comparative Status of Knowledge on Nutrition & its Practices Among the Wrestlers of Different Weight Categories ... ..	109
4.9	Status of Calorie Intake of Wrestlers In Maharashtra ... ..	112
4.10	Significant Difference Between Required Calorie Value & Actual Calorie Intake of Wrestlers in Maharashtra ... ..	114

## LIST OF FIGURES

<u>FIGURE</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
4.1	Knowledge on Nutritional Status of the Wrestlers in Maharashtra ...	110
4.2	Calorie Intake of Wrestlers of 96+ Kg Weight Category ... ..	115
4.3	Calorie Intake of Wrestlers of 96 Kg Weight Category ... ..	116
4.4	Calorie Intake of Wrestlers of 84 Kg Weight Category ... ..	117
4.5	Calorie Intake of Wrestlers of 74 Kg Weight Category ... ..	118
4.6	Calorie Intake of Wrestlers of 66 Kg Weight Category ... ..	119
4.7	Calorie Intake of Wrestlers of 60 Kg Weight Category ... ..	120
4.8	Calorie Intake of Wrestlers of 55 Kg Weight Category ... ..	121

---



## LIST OF APPENDICES

<u>APPENDIX</u>		<u>PAGE</u>
I	Raw Scores of Subjects in 96+ Kg Weight Category on Nutrition Knowledge ... ..	138
II	Raw Scores of Subjects in 96 Kg Weight Category on Nutrition Knowledge ... ..	142
III	Raw Scores of Subjects in 84 Kg Weight Category on Nutrition Knowledge ... ..	146
IV	Raw Scores of Subjects in 74 Kg Weight Category on Nutrition Knowledge ... ..	150
V	Raw Scores of Subjects in 66 Kg Weight Category on Nutrition Knowledge ... ..	154
VI	Raw Scores of Subjects in 60 Kg Weight Category on Nutrition Knowledge ... ..	158
VII	Raw Scores of Subjects in 55 Kg Weight Category on Nutrition Knowledge ... ..	162
VIII	Total Calorie Required/Intake of Subjects in 96+ Kg Weight Category ... ..	166

---

## LIST OF APPENDICES (Contd.)

<u>APPENDIX</u>		<u>PAGE</u>
IX	Total Calorie Required/Intake of Subjects in 96 Kg Weight Category ... ..	170
X	Total Calorie Required/Intake of Subjects in 84 Kg Weight Category ... ..	174
XI	Total Calorie Required/Intake of Subjects in 74 Kg Weight Category ... ..	178
XII	Total Calorie Required/Intake of Subjects in 66 Kg Weight Category ... ..	182
XIII	Total Calorie Required/Intake of Subjects in 60 Kg Weight Category ... ..	186
XIV	Total Calorie Required/Intake of Subjects in 55 Kg Weight Category ... ..	190
XV	Calorie Requirement Chart ... ..	194
XVI	Final Questionnaire ... ..	197

---