



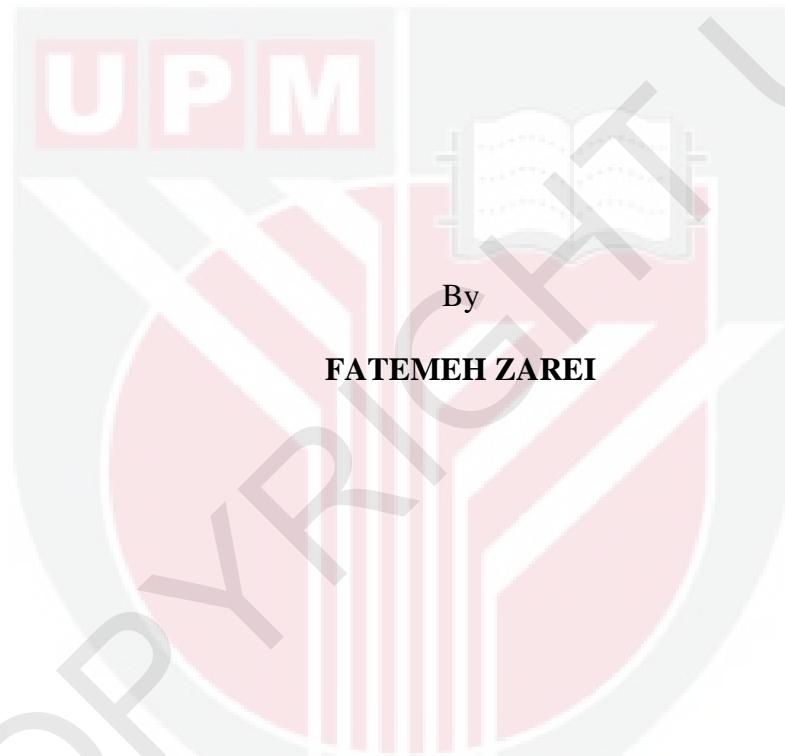
**UNIVERSITI PUTRA MALAYSIA**

**NUTRITION AND WEIGHT MANAGEMENT KNOWLEDGE, LIFESTYLE  
FACTORS, DIETARY INTAKE AND BODY WEIGHT STATUS OF IRANIAN  
POSTGRADUATE STUDENTS IN UNIVERSITI PUTRA MALAYSIA (UPM),  
MALAYSIA**

**FATEMEH ZAREI**

**FPSK(m) 2011 9**

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FACTORS, DIETARY INTAKE AND BODY WEIGHT STATUS OF  
IRANIAN POSTGRADUATE STUDENTS IN UNIVERSITI PUTRA  
MALAYSIA (UPM), MALAYSIA**



**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,  
in Fulfillment of the Requirement for the Degree of Master of Science**

**June 2011**

## **DEDICATION**

*This thesis is especially dedicated to:*

*To The Lord of Time & Age Imam Zaman*

*To The Soul of My Martyred Father who sacrificed himself  
to save Islam, my country and people, may his soul rest in  
peace, who led me on the path to hard work perseverance,  
optimism, reliance of GOD*

*To My Most Beloved Mother for all her True love, Favour,  
Effort Support, Encouragement, Patience from My  
Childhood*

*To My Dear Sisters and Brothers who have filled my life  
with joy and happiness.*

Abstract of thesis presented to the senate of Universiti Putra Malaysia in fulfillment  
of the requirement for the degree of Master of Science

**Nutrition and weight management knowledge, lifestyle factors, dietary intake  
and body weight status of Iranian postgraduate students in Universiti Putra  
Malaysia (UPM), Malaysia**

By

Fatemeh Zarei

June 2011

**Chairman: Dr. Mohd Nasir Mohd Taib**

**Faculty: Medicine and Health Sciences**

A cross- sectional study was conducted to determine factors associated with body weight status of Iranian postgraduate students in Universiti Putra Malaysia (UPM), Malaysia. A self- administered questionnaire addressing socio-demographic factors, nutritional knowledge, weight management knowledge, life style factors and dietary intake was completed by 210 female and male students aged between 22-55 years. Anthropometric factors (height, weight, waist and hip circumferences and body fat composition) were measured using standard procedures. Body Mass Index (BMI) and Waist Hip Ratio (WHR) were calculated for each subject. WHO classifications (WHO, 2000; WHO, 2004) were used for categorizing WHR and BMI respectively.

The respondents comprised 110 (53.4%) females and 100 (47.6%) males. Results indicated that 7.1% of all respondents were underweight, 64.8% normal weight,

24.3% overweight and 3.8% obese. Two thirds of the respondents or 140 (66.7%) were single and only 70 (33.3%) of the respondents were married. About 109 (51.9%) of the respondents were pursuing their Masters degree while 101 (48.1%) were pursuing their PhD degree.

Sex was associated with BMI ( $\chi^2=12.200$ ,  $p<0.01$ ) in this study. Among male respondents, the proportion of overweight and obese was higher than female respondents. Prevalence of overweight and obesity were 35.0% and 4.0% in males as compared to 14.5% and 3.6% of the female respondents.

For nutritional knowledge the mean score for male respondents was  $25.9\pm5.8$  whereas the mean score for female respondents was  $27.3\pm5.1$ . Also, 70.5% of the respondents were categorized as having a low level of nutritional knowledge, 26.7% of the respondents had moderate level of nutritional knowledge and only 2.8% of the respondents had a high level of nutritional knowledge. There was no significant relationships between BMI and nutritional knowledge ( $Rho=-0.032$ ,  $p>0.05$ ).

For weight management knowledge the mean score for male respondents was  $5.7\pm2.3$ ; whereas the mean score for female respondents was  $6.6\pm1.5$ . Most of the respondents, 55.7% were categorized as having low level of weight management knowledge, 41.4% of the respondents had moderate level of weight management knowledge and only 2.9% respondents had a high level of weight management knowledge. There was no significant correlation between BMI and weight management knowledge ( $Rho=0.085$ ,  $p>0.05$ ).

About 64 (30.5%) of the respondents comprising of 46 (46.0%) males and 18 (16.4%) females have tried smoking. There were 146 (69.5%) respondents who were non-smokers. There was no significant relationships between BMI categories and smoking ( $\chi^2=2.467$ ,  $p>0.05$ ). Overall, 19.1% of the respondents had high physical activity. About 25.7% of the respondents had moderate physical activity. However, 55.2% of the respondents had low activity during the previous week. There was correlation between BMI with physical activity ( $r=-0.15$ ,  $p<0.05$ ).

Bivariate analysis showed statistically significant correlation between protein ( $\text{Rho}=0.677$ ,  $p<0.01$ ), carbohydrate ( $\text{Rho}=0.848$ ,  $p<0.01$ ), fat ( $\text{Rho}=0.865$ ,  $p<0.01$ ), fiber ( $\text{Rho}=0.743$ ,  $p<0.01$ ), vitamin C ( $\text{Rho}=0.136$ ,  $p<0.05$ ), calcium ( $\text{Rho}=0.352$ ,  $p<0.01$ ) and iron ( $\text{Rho}=0.551$ ,  $p<0.01$ ) with BMI. There were relationships between body fat ( $\text{Rho}=0.235$ ,  $p<0.01$ ), waist circumference ( $\text{Rho}=0.725$ ,  $p<0.01$ ), hip circumference ( $\text{Rho}=0.721$ ,  $p<0.01$ ) and WHR ( $\text{Rho}=0.245$ ,  $p<0.01$ ) with BMI.

Multivariate analysis found a factor contributing significantly to body weight status in postgraduate Iranian students was physical activity which explained about 10% of the variation in BMI ( $R=0.31$ ,  $R^2=0.10$ ;  $F=22.345$ ,  $p=0.000$ ). The present study provided an insight into factors that contribute to body weight status of postgraduate Iranian students in UPM. These findings show the need for a nutrition promotion program for the Iranian students to help them change their negative food habits and improve their lifestyle.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai  
memenuhi keperluan untuk ijazah Master Sains

**Pemakanan dan Pengetahuan tentang Pengurusan Berat Badan, Faktor Gaya  
Hidup, Pengambilan Diet dan Status Berat Badan Pelajar Pasca-Siswazah Iran  
di Universiti Putra Malaysia (UPM), Malaysia**

Oleh

**Fatemeh Zarei**

**Jun 2011**

**Pengerusi: Dr. Mohd Nasir Mohd Taib**

**Fakulti: Fakulti Perubatan dan Sains Kesihatan**

Satu kajian rentas telah dijalankan untuk menentukan faktor-faktor yang berkaitan dengan status berat badan pelajar pasca-siswazah Iran di UPM, Malaysia. Satu soal selidik isi sendiri yang mengandungi soalan-soalan tentang faktor sosio-demografik, pengetahuan tentang pemakanan, pengetahuan tentang pengurusan berat badan, faktor-faktor gaya hidup dan pengambilan diet telah dilengkapkan oleh 210 pelajar perempuan dan lelaki berumur 22 hingga 55 tahun. Faktor-faktor antropometri (tinggi, berat, lilitan pinggang dan punggung dan komposisi lemak badan) telah diukur mengikut prosedur yang standard. Indeks Jisim Tubuh (BMI), nisbah pinggang-punggung (WHR) dihitung untuk setiap responden. Klasifikasi WHO (WHO, 2000; WHO, 2004) telah digunakan untuk mengkategorikan WHR dan BMI masing-masing.

Responden terdiri daripada 110 (53.4%) perempuan dan 100 (47.6%) lelaki. Keputusan kajian menunjukkan bahawa 7.1% adalah kekurangan berat badan, 64.8% mempunyai berat badan yang normal, 24.3% berlebihan berat badan dan 3.8% adalah obes. Lebih daripada separuh responden atau 140 (66.7%) adalah bujang dan hanya 70 (33.3%) responden yang telah berkahwin. Lebih kurang 109 (51.9%) responden sedang mengikuti program Ijazah Sarjana manakala 101 (48.1%) sedang mengikuti program Ph.D.

Dalam kajian ini, jantina didapati adalah berkaitan dengan IJT ( $\chi^2=12.200$ ,  $p<0.01$ ). Di kalangan responden lelaki, mereka yang berlebihan berat badan dan kegemukan adalah lebih banyak berbanding responden perempuan. Prevalens mereka yang berlebihan berat badan dan kegemukan adalah 35.0% dan 4.0% masing-masing di kalangan lelaki berbanding 14.5% dan 3.6% masing-masing di kalangan responden perempuan.

dalam kajian ini. Pengetahuan tentang pemakanan pula menunjukkan bahawa responden lelaki mendapat skor min sebanyak  $25.9\pm5.8$  manakala responden perempuan pula mendapat skor min sebanyak  $27.3\pm5.1$ . Selanjutnya, 70.5% responden didapati berada dalam kategori pengetahuan tentang pemakanan yang lemah, 26.7% pula mempunyai pengetahuan tentang pemakanan yang sederhana dan hanya 2.8% responden memiliki pengetahuan tentang pemakanan yang tinggi. Tiada perkaitan yang signifikan antara BMI dan pengetahuan tentang pemakanan ( $Rho=-0.032$ ,  $p>0.05$ ).

Pengetahuan tentang pengurusan berat badan pula memaparkan skor min sebanyak  $5.7 \pm 2.3$  untuk responden lelaki manakala skor min responden perempuan pula adalah  $6.6 \pm 1.5$ . Kebanyakan responden (55.7%) berada dalam kategori tahap pengetahuan rendah, 41.4% pula tahap sederhana dan hanya 2.9% berada dalam kategori tahap pengetahuan tinggi. Tiada perkaitan yang signifikan didapati antara BMI dan pengetahuan tentang pengurusan berat badan ( $\text{Rho}=0.085$ ,  $p>0.05$ ).

Lebih kurang 64 (30.5%) responden yang terdiri daripada 46 (46.0%) lelaki dan 18 (16.4%) perempuan pernah merokok. Terdapat 146 (69.5%) responden yang tidak merokok. Perkaitan antara kategori IJT dan merokok adalah tidak signifikan ( $\chi^2=2.467$ ,  $p>0.05$ ). Keseluruhananya, 19.1% responden mengamalkan tahap aktiviti fizikal yang tinggi. Lebih kurang 25.7% responden mengamalkan tahap aktiviti fizikal yang sederhana. Namun demikian, 55.2% responden mengamalkan tahap aktiviti fizikal yang rendah pada minggu yang lepas. Analisa menunjukkan bahawa perkaitan antara BMI dan aktiviti fizikal adalah signifikan ( $r=-0.15$ ,  $p<0.05$ ).

Analisis dwi-pembolehubah menunjukkan perkaitan yang signifikan antara protein ( $\text{Rho}=0.677$ ,  $p<0.01$ ), karbohidrat ( $\text{Rho}=0.848$ ,  $p<0.01$ ), lemak ( $\text{Rho}=0.865$ ,  $p<0.01$ ), serat ( $\text{Rho}=0.743$ ,  $p<0.01$ ), vitamin C ( $\text{Rho}=0.136$ ,  $p<0.05$ ), kalsium ( $\text{Rho}=0.352$ ,  $p<0.01$ ) dan zat besi ( $\text{Rho}=0.551$ ,  $p<0.01$ ) dengan IJT. Terdapat perkaitan yang signifikan antara lemak badan ( $\text{Rho}=0.235$ ,  $p<0.01$ ), lilitan pinggang ( $\text{Rho}=0.725$ ,  $p<0.01$ ), lilitan punggung ( $\text{Rho}=0.721$ ,  $p<0.01$ ), dan WHR ( $\text{Rho}=0.245$ ,  $p<0.01$ ) dengan BMI.

Salah satu faktor yang menyumbang secara signifikan terhadap status berat badan di kalangan pelajar pasca-siswazah Iran adalah aktiviti fizikal di mana ia menerangkan lebih kurang 10% daripada variasi dalam BMI ( $R=0.31$ ,  $R^2=0.10$ ;  $F=22.345$ ,  $p=0.000$ ). Kajian ini membekalkan maklumat penting mengenai faktor-faktor yang menyumbang kepada status berat badan di kalangan pelajar pasca-siswazah Iran di UPM. Keputusan kajian ini menggariskan perlunya program promosi pemakanan untuk pelajar Iran untuk membantu mereka mengubah tabiat pemakanan yang negatif dan memperbaiki gaya hidup mereka.

## **ACKNOWLEDGEMENTS**

Every praise is due to Allah alone, the Merciful and peace be upon His prophet who is forever a torch of guidance and knowledge for humanity as a whole.

I wish to express my profound gratitude and thanks to my supervisor Dr. Mohd Nasir Mohd Taib for his guidance, enthusiastic supervision encouragement and help throughout the duration of this research. Without my supervisor, this work would not be possible.

Heartiest thanks to my co-supervisor, Dr. Hazizi Abu Saad for his timely advice, guidance and help throughout the duration of this research.

I would like to express my appreciation to my twin sister Maryam. My deepest appreciation also goes to my friend Ariyo Movahedi who always acts as my brother for his guidance and to everyone who helped me directly or indirectly throughout this project.

In addition, I would like to dedicate my sincere thanks and appreciation to the Department of Nutrition and Dietetics and also to the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia.

I certify that a Thesis Examination Committee has met on 20 June 2011 to conduct the final examination of Fatemeh Zarei on her thesis entitled “Nutrition and Weight Management Knowledge, Lifestyle Factors, Dietary Intake and Body Weight Status of Iranian Postgraduate Students in Universiti Putra Malaysia (UPM), Malaysia” in accordance with “Universiti Pertanian Malaysia” (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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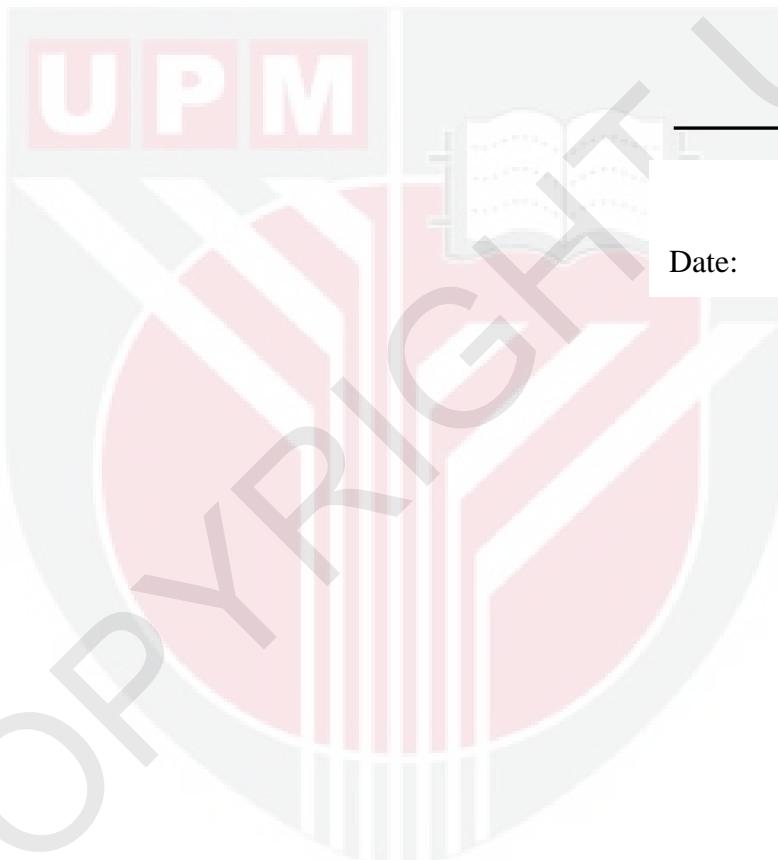
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Date:

## **DECLARATION**

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at other institutions.



**FATEMEH ZAREI**

Date:

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