



UNIVERSITI PUTRA MALAYSIA

**FACTORS ASSOCIATED WITH BODY WEIGHT STATUS AMONG
MALAY GOVERNMENT EMPLOYEES IN PENANG**

AINA MARDIAH BASRI

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MASTER OF SCIENCE

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**FACTORS ASSOCIATED WITH BODY WEIGHT STATUS AMONG MALAY
GOVERNMENT EMPLOYEES IN PENANG**

By

AINA MARDIAH BASRI

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in
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**FACTORS ASSOCIATED WITH BODY WEIGHT STATUS AMONG MALAY
GOVERNMENT EMPLOYEES IN PENANG**

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February 2012

Chairman: Hazizi Abu Saad, PhD

Faculty: Medicine and Health Sciences

Steady increase in body weight is becoming a major health problem worldwide. The objective of this cross-sectional study was to determine the factors of body weight status among Malay government employees in Federal Government Building, Penang. The data collection was carried out from May – July 2009. Anthropometric measurements were conducted by measuring body weight, height, waist and hip circumference, fat percentage and blood pressure of the respondents. Body weight and fat percentage was measured by using *TANITA Body Composition Analyzer (TBF-306, Japan)* while height of the respondents was measured by using *SECA Body meter (Vogel & Halke GmbH & Co., Germany)*. Accelerometer (*Suzuken Company Limited, Japan*) was used to determine physical activity level (PAL). A set of questionnaire was used to determine socio-demographic information, family medical history, smoking habit, eating behaviors and weight control behaviors. 10ml fasting blood had been taken to determine lipid profiles of the respondents. From a total of 233 respondents recruited, 44.6% were male and 55.4% were female. A majority of the respondents (53.2%) were in the range of 18-29 years. More than

half of female (72.9%) and male (66.3%) were categorized as obese (body fat percentage was too high). Almost 30% of the respondents were classified as overweight whereas 20.6% of them were classified as obese based on BMI classification. Almost 65% of the respondents categorized as sedentary, followed by active (32.9%) and vigorous (2.4%) according to PAL classification. Compared to other attitudes and strategies in weight control behaviors, outcome expectation for diet and exercise were found to be much prevalent among respondents. More than 70% of the respondents were dissatisfied with current weight and trying to lose weight. Bivariate analysis showed that BMI were associated with age ($r=0.340$, $p=0.000$), income ($r=0.200$, $p=0.003$), waist circumference ($r=0.841$, $p=0.000$), body fat percentage ($r=0.665$, $p=0.000$), systolic BP ($r=0.268$, $p=0.000$), diastolic BP ($r=0.307$, $p=0.000$), triglycerides ($r=0.176$, $p=0.038$), high density lipoprotein cholesterol ($r=-0.234$, $p=0.006$), PAL ($r=-0.353$, $p=0.000$), social support for diet ($r=0.229$, $p=0.000$), social support for exercise ($r=0.136$, $p=0.038$), social interaction for diet ($r=0.141$, $p=0.031$), body weight satisfaction ($\chi^2=22.913$, $p=0.000$) and “attempt to lose weight” ($\chi^2=45.184$, $p=0.000$). Multivariate analysis revealed that PAL was the most robust factor in predicting body weight status of the respondents followed by age and “attempt to lose weight”. Weight management strategies that focus on weight loss maintenance should include physical activity program or nutrition intervention for the obese adults population.

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

**FAKTOR YANG BERHUBUNGKAIT DENGAN STATUS BERAT BADAN DI
KALANGAN PENJAWAT AWAM MELAYU DI PULAU PINANG**

Oleh

AINA MARDIAH BASRI

Februari 2012

Pengerusi: Hazizi Abu Saad, PhD

Fakulti: Fakulti Perubatan dan Sains Kesihatan

Peningkatan berat badan kini telah menjadi masalah utama di seluruh pelusuk dunia. Objektif kajian keratan rentas ini adalah untuk mengenalpasti faktor penentu kepada status berat badan di kalangan penjawat awam Melayu yang berkhidmat di Bangunan Persekutuan Pulau Pinang. Pengutipan data telah dilakukan dari Mei 2009 hingga Julai 2009. Pengukuran antropometri telah dijalankan bagi menentukan berat badan, tinggi, ukuran pinggang dan pinggul, peratus lemak badan dan tekanan darah responden. Berat dan peratus lemak badan diukur menggunakan *TANITA Body Composition Analyzer (TBF-306, Japan)* sementara tinggi responden diukur menggunakan *SECA Body meter (Vogel & Halke GmbH & Co., Germany)*. Accelerometer (*Suzuken Company Limited, Japan*) digunakan bagi menentukan tahap fizikal aktiviti. Borang soal selidik telah digunakan untuk mendapatkan informasi sosio-demografik, sejarah perubatan keluarga, tabiat merokok, tingkahlaku pemakanan dan tingkahlaku pengawalan berat badan sementara 10ml darah berpuasa diambil bagi menentukan profil lipid mereka. Daripada 233 responden yang menyertai kajian ini, 44.6% adalah terdiri daripada lelaki dan 55.4% adalah terdiri daripada wanita. Kebanyakan

daripada responden berusia dalam lingkungan 18-29 tahun. Lebih daripada separuh wanita (72.9%) dan lelaki (66.3%) dikategorikan dalam kategori obesiti (peratus lemak badan yang terlalu tinggi). Hampir 30% daripada responden dikategorikan sebagai lebih berat badan sementara 20.6% daripada mereka dikategorikan sebagai obesiti berdasarkan kepada klasifikasi IJT. Hampir 65% daripada responden dikategorikan sebagai sedentari, diikuti dengan aktif (32.9%) dan bertenaga (2.4%) berdasarkan kepada klasifikasi tahap aktiviti fizikal. Berbanding tingkahlaku dan strategi lain dalam tingkahlaku pengawalan berat badan, jangkaan hasil untuk diet dan senaman adalah tinggi di kalangan responden. Lebih 70% daripada responden tidak berpuas hati dengan berat badan sedia ada dan telah mencuba untuk menurunkan berat badan mereka. Analisis bivariat menunjukkan IJT telah berhubungkait dengan umur, ($r=0.340$, $p=0.000$), pendapatan ($r=0.200$, $p=0.003$), ukur lilit pinggang ($r=0.841$, $p=0.000$), peratus berat badan ($r=0.665$, $p=0.000$), tekanan darah sistolik ($r=0.268$, $p=0.000$), tekanan darah diastolik ($r=0.307$, $p=0.000$), trigliserida ($r=0.176$, $p=0.038$), kolesterol lipoprotein berkepadatan tinggi ($r=-0.234$, $p=0.006$), tahap aktiviti fizikal ($r=-0.353$, $p=0.000$), sokongan sosial untuk diet ($r=0.229$, $p=0.000$), sokongan sosial untuk senaman ($r=0.136$, $p=0.038$), interaksi sosial untuk diet ($r=0.141$, $p=0.031$), kepuasan berat badan ($\chi^2=22.913$, $p=0.000$) dan “mencuba untuk menurunkan berat” ($\chi^2=45.184$, $p=0.000$). Analisis multivariat menunjukkan tahap aktiviti fizikal menjadi faktor utama dalam menentukan status berat di kalangan responden, diikuti oleh umur dan “mencuba untuk menurunkan berat”. Strategi pengurusan berat badan yang mengutamakan penjagaan penurunan berat badan haruslah dimasukkan sebagai salah satu pembelajaran dalam menjalankan program aktiviti fizikal atau program nutrisi terutamanya di kalangan orang dewasa.

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Last but not least, I wish to extend my sincere appreciation to my beloved family members for their care, support and encouragement. In addition, I would like to extend my gratitude to all my lecturers and friends who lend their hand and support me all the time.

I certify that an Examination Committee has meet on 2nd Feb 2012 to conduct the final examination of Aina Mardiah Basri on her Master of Science entitled “Factors Associated with Body Weight Status among a Sample of Malay Government Employees in Penang” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The committee recommends that the student be awarded the degree of Master of Science.

Members of the Examination Committee were as follows:

Prof. Madya Dr Rokiah bt Mohd Yusof

Department of Nutrition and Dietetics,
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia
(Chairman)

Dr. Rosita bt Jamaluddin

Department of Nutrition and Dietetics,
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia
(Internal Examiner)

Dr. Zaiton bt Ahmad

Department of Family Medicine,
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia
(Internal Examiner)

Y. Bhg. Prof. Dr. Norimah A. Karim

Nutrition Program,
School of Healthcare Sciences,
Faculty of Health Sciences,
Universiti Kebangsaan Malaysia
(External Examiner)

Professor and Deputy Dean,
School of Graduate Studies,
Universiti Putra Malaysia
Date:

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Master of Science. The number of the Supervisory Committee was as follows:

Hazizi Abu Saad, PhD

Senior Lecturer
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia
(Chairman)

Zaitun Yassin, PhD

Associate Professor
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia

Mohd Nasir Mohd Taib, DrPH

Senior Lecturer
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia

Hamid Jan Jan Mohamad, PhD

Senior Lecturer
School of Health Science,
Universiti Sains Malaysia

BUJANG BIN KIM HUAT, PhD

Professor and Dean
School of Graduate Studies
Universiti Putra Malaysia
Date:

DECLARATION

I declare that the thesis is 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 any other institution.



AINA MARDIAH BASRI

Date: 2 February 2012

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