UNIVERSITI PUTRA MALAYSIA

FACTORS ASSOCIATED WITH PHYSICAL INACTIVITY AMONG HEALTH STAFF IN A GOVERNMENT DEPARTMENT IN PUTRAJAYA

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By

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Dissertation Submitted to the Department of Community Health , Faculty of Medicine and Health Sciences, Universiti Putra Malaysia in Fulfillment of the Requirements for the Degree of Master of Public Health

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NURHALIZA BINTI ZAKARIAH

August 2017

Chairperson : Dr Huda binti Zainuddin
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Introduction: Physical inactivity has been recognized as the fourth leading risk factor for mortality worldwide. Individuals who are physically inactive has increased risk 20% to 30% to die prematurely. Individuals who fulfil the minimum recommendation of physical activity can prevent the development of noncommunicable diseases. In 2015, 33.5% of the Malaysian adults were reported to be physically inactive. Various factors are found to be associated with physical inactivity participation and these factors need to be explored.

Objective: To assess the level of physical inactivity and its associated factors among health staff in the Department of Public Health in the Ministry of Health Malaysia Headquarters (MOH HQ), Putrajaya.

Methodology: A cross-sectional study based on proportionate simple random sampling was conducted in the Department of Public Health in the MOH HQ, Putrajaya. A total of 310 respondents were sampled according to the proportion from five divisions and data were collected using self-administered questionnaire consist of sociodemographic, smoking status, occupational, health status and physical activity level. Chi-square, Independent t-test, Mann-Whitney U test and logistic regression in IBM SPSS Version 22.0 were used to analyzed the data.

Result: The respond rate was 97.7% (303 out of 310). The prevalence of physical inactivity among respondents was 37.6%. The predictors for physical inactivity were smoker/ex-smoker (p =0.027, aOR =2.308), certificate/diploma education (p = 0.008, aOR =2.135), personal barrier (p =0.017, aOR =1.055) and social environment barrier (p =0.025, aOR =1.106). Common personal barriers reported include lack of self-discipline

and causes muscle and joint pain. Meanwhile, common social environment barriers reported were don't have free time and don't have a company.

Conclusion: The prevalence of physical inactivity among staff was almost similar to the national level (33.5%). Individual that has the higher chance of being physically inactive include those with certificate or diploma education and smokers or ex-smokers. Those with personal barriers (such as lack of self-discipline and cause muscle and joint pain) and social environment barriers (including don't have free time and don't have a company) also has higher possibility of being physically inactive. Thus, appropriate health intervention should be developed by taking these factors into consideration in order to promote physical activity among the health staff.

Keywords: physical inactivity, health staff, associated factors, physical activity barrier, government servant

Abstrak disertasi yang dikemukakan kepada Jabatan Kesihatan Komuniti, Fakulti Perubatan dan Sains Kesihatan, Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Sarjana Perubatan Kesihatan Awam

FAKTOR-FAKTOR YANG BERKAITAN DENGAN KETIDAKAKTIFAN SECARA FIZIKAL DI KALANGAN KAKITANGAN YANG BERKHIDMAT DI JABATAN KERAJAAN, PUTRAJAYA

Oleh

NURHALIZA BINTI ZAKARIAH

Pengerusi : Dr Huda Zainuddin
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Pengenalan: Gaya hidup tidak aktif merupakan faktor risiko utama penyebab kematian di seluruh dunia. Individu yang tidak aktif mempunyai 20 hingga 30 peratus risiko lebih tinggi untuk mati lebih awal. Individu yang melakukan aktiviti fizikal berdasarkan saranan yang diberikan boleh mengurangkan risiko menghidapi penyakit tidak berjangkit. Pada tahun 2015, 33.5% orang dewasa di Malaysia dilaporkan tidak aktif. Pelbagai faktor telah dikaitkan dengan gaya hidup tidak aktif dan faktor-faktor ini perlu diterokai.

Objektif: Untuk menilai tahap ketidakaktifan secara fizikal dan faktor-faktor yang berkaitan dengannya di kalangan kakitangan di Jabatan Kesihatan Awam, Ibu Pejabat Kementerian Kesihatan Malaysia (IPKKM), Putrajaya

Metodologi: Satu kajian hirisan lintang berdasarkan persampelan rawak mudah berkadar telah dijalankan di Jabatan Kesihatan Awam di IPKKM, Putrajaya. Seramai 310 responden telah disampel mengikut perkadaran dari lima bahagian dan data dikumpul dengan menggunakan borang soal selidik merangkumi sosio-demografi, faktor pekerjaan, status merokok, status kesihatan dan tahap aktiviti fizikal. Ujian Chi-square, Independent t, Mann-Whitney U dan regresi logistic dalam aplikasi IBM SPSS versi 22.0 telah digunakan untuk menganalisis data.

Keputusan: Jumlah responden yang terlibat adalah 303 daripada 310 individu yang terpilih. Prevalens responden yang tidak aktif adalah 37.6%. Peramal bagi fizikal yang tidak aktif adalah perokok / perokok (p = 0.027, aOR = 2.308), pendidikan sijil / diploma (p = 0.008, aOR = 2.135), penghalang peribadi (p = 0.017, aOR = 1.055) dan penghalang persekitaran sosial (p = 0.025, aOR = 1.106). Bagi penghalang peribadi, halangan yang tertinggi dilaporkan adalah kekurangan disiplin; dan menyebabkan sakit otot dan sendi. Manakala bagi penghalang persekitaran sosial, tiada masa lapang dan tiada rakan untuk bersenam merupakan halangan tertinggi dicatatkan.

Kesimpulan: Prevalen kakitangan yang tidak aktif adalah hampir sama dengan prevalen kebangsaan iaitu 33.5%. Individu yang berisiko lebih tinggi untuk tidak aktif secara fizikal termasuk mereka yang mempunyai sijil atau pendidikan diploma dan perokok atau bekas perokok. Mereka yang mempunyai halangan peribadi (seperti kekurangan disiplin diri; dan menyebabkan sakit otot dan sendi) dan halangan persekitaran sosial (termasuk tidak mempunyai masa lapang dan tidak mempunyai rakan untuk bersenam) juga mempunyai kebarangkalian yang lebih tinggi untuk menjadi tidak aktif. Oleh itu, perancangan pelaksanaan bagi program promosi kesihatan untuk menggalakkan penglibatan kakitangan dalam aktiviti fizikal haruslah mengambil kira faktor-faktor tersebut.

Katakunci: aktiviti fizikal, kakitangan kesihatan, faktor berkaitan, halangan aktiviti fizikal, penjawat awam

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I certify that a Dissertation Examination Committee has met on 2nd August 2017 to conduct the final examination of Nurhaliza binti Zakariah on her dissertation entitled "Factors Associated with Physical Inactivity among Health Staff in a Government Department in Putrajaya" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Public Health.

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Declaration by Members of Supervisory Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) are adhered to.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURE

LIST OF APPENDICES

LIST OF ABBREVIATIONS

HQ	Headquarters
IPAQ	International Physical Activity Questionnaire
IPKKM	Ibu Pejabat Kementerian Kesihatan Malaysia
MET	Metabolic Equivalent
MOH	Ministry of Health
NCD	Noncommunicable disease
PA	Physical Activity
PAEE	Physical Activity Related Energy Expenditure
PAL	Physical Activity Level

CHAPTER 1

INTRODUCTION

1.1 Background

Physical activity (PA) has been acknowledged to benefit the humans in terms of psychosocial health, improve functional ability and improve general quality of life (Powell & Pratt, 1996). It has also been proven as a protective factor against coronary heart disease (Press, Freestone, & George, 2003) and certain cancers (Batty & Thune, 2000). National Institutes of Health (NIH) Consensus Development Panel on Physical Activity and Cardiovascular Health defined PA as "any bodily movement produced by skeletal muscles that requires energy expenditure" and produces overall health benefits (NIH Consensus Development Panel on Physical Activity and Cardiovascular Health, 1996). World Health Organization (WHO) also define PA similar as the above definition (World Health Organization, 2016). Many use PA and exercise interchangeably but actually PA is not equivalent to "exercise". Exercise is a part of PA which is planned, structured, repetitive, and targets to improve or maintain one or more components of physical fitness (World Health Organization, 2016).

Physical activity level (PAL) explains the level of a person's participation in PA and it is divided into high, moderate and low categories (International Physical Activity Questionnaire Research Committee, 2005). By doing moderate intensity activity for at least one hour per day or vigorous intensity activity for half an hour per day, a person is considered as having high PAL. Moderate PAL is classified as moderate intensity PA for at least 30 minutes per day. On the other hand, low PAL is categorized when there is no criteria met for moderate or high PAL (International Physical Activity Questionnaire Research Committee, 2005).

Regular PA of moderate intensity has significant benefits for health. By taking the opportunity to be more active throughout the day while performing daily activities, people can quite easily achieve the recommended activity levels (World Health Organization, 2016).

Adequate levels of PA could improve muscular and cardiorespiratory fitness; improve bone and functional health; reduce the risk of hypertension, coronary heart disease, stroke, diabetes, breast and colon cancer; reduce the risk of falls as well as hip or vertebral fractures; and are fundamental to energy balance and weight control (Volek, Vanheest, & Forsythe, 2005; World Health Organization, 2016). Regular PA not only improves physical health but also benefit in better psychological health (Sullum, Clark, & King, 2000; Weyerer & Kupfer, 1994), and alleviate symptoms of depression and anxiety (Paluska & Schwenk, 2000). Individuals who are physically inactive has increased risk 20% to 30% to die prematurely as compared to people who are otherwise follow the recommendation by World Health Organization (WHO).

From various studies conducted over the years, researchers found out certain factors that could influence or associated with PAL including age (Booth, Owen, Bauman, Clavisi, & Leslie, 2000; Brownson et al., 2000), education (Salmon, Bauman, Crawford, Timperio, & Owen, 2000; Yin & Boyd, 2000), gender (Ross, 2000), socioeconomic status (Cooper & Hancock, 2011), marital status (Dai, Wang, & Morrison, 2014), ethnicity (Cheah, 2011), presence of chronic diseases (Cheah & Poh, 2014) and also overweight or obesity (Poobalan, Aucott, Clarke, & Smith, 2012).

Studies among office workers reported that physical inactivity were associated with high BMI and high sitting time (Biernat & Milde, 2010) which explained by the sedentary nature of work, use of computers and tendency to sit more. Workers with poorer health were also reported to be less active (Kumagai, 2012). Types of work influence the level of physical activity whereby the administration staff were found to be less active as compared to manual workers (Biernat, 2015).

In addition, other factors that have been reported to affect the physical activity were smoking status (Heydari et al., 2015), alcohol consumption (French, Popovici, & Maclean, 2009) and dietary habits (Laaksonen, Luoto, Helakorpi, & Uutela, 2002). These are all modifiable factors that play important role to improve and maintain general well-being.

Some psychological and emotional factors were also found to be associated with PAL such as attitudes (Courneya, Plotnikoff, Hotz, & Birkett, 2000; Panter & Jones, 2010), barrier to exercise (Booth et al., 2000), self-efficacy (Trost, Owen, Bauman, Sallis, & Brown, 2002), enjoyment of exercise (Booth et al., 2000) and motivation (McNeill, Wyrwich, Brownson, Clark, & Kreuter, 2006). Social support and cultural factors (McNeill et al., 2006) were also found to be related to personal's PAL. Another important factor associated with PAL is the physical environmental that includes access to facilities (Mccormack & Shiell, 2011), climate (Tucker & Gilliland, 2007) and neighborhood safety (Panter & Jones, 2010).

1.2 Problem Statements

Physical inactivity is one of the 10 leading risk factors for global mortality and is on the rise in many countries, adding to the burden of non-communicable disease (NCDs) and affecting general health worldwide (World Health Organization, 2014). NCDs impose a major health threat and development challenges of the 21st century, especially in low and middle-income countries (World Health Organization, 2014).

In Europe, many surveillances were conducted to monitor the prevalence and the trend of physical activity involving self-administered questionnaires and face-to-face interview (World Health Organization, 2010). Locally, National Health and Morbidity Survey (NHMS) was done routinely among the general population to monitor the prevalence and trends of major NCDs as well as the risk factors and physical activity is part of it. NHMS in 2015 reported around 7 million (33.5%) of adults or 1 in 3 adults in Malaysia were physically inactive (Institute for Public Health, 2015). This finding was higher than

WHO finding which showed 1 in 4 adults were not physically active (World Health Organization, 2016). This is supported by Malaysian Adult Nutrition Survey (MANS) in 2003 which reported that 39.7% Malaysian aged 18 to 59 years old were found to be physically inactive and the population spent the majority of their time (74% of the day) in sedentary activities, such as sleeping or lying down (Poh et al., 2010). These statistics suggest that adult physical inactivity is an important public health concern in Malaysia. However, the factors contributing to the physical inactivity are not explored in NHMS or MANS. Thus, there is a need to conduct more local study for better understanding of these factors.

Multiple factors have been shown to be associated with physical inactivity. From an international systematic review on physical activity, there are 5 major domains that correlates with physical activity i.e. socio-demography (age, gender, ethnicity, education, marital status and health status), psychological and cognitive (self efficacy, health value, attitude, competency and barriers towards PA); behavioural (smoking and adulthood activity history) and social social support, norms, parental activity) and environment (neighbourhood design, aesthetic, recreational facilities and transport) ((Bauman et al., 2012). These factors, if not addressed properly, could increase the numbers of physical inactivity which subsequently contribute to the growing numbers of NCDs.

The urban population in Malaysia was found to be more physically inactive [35% (95% CI: 63.7,66.3)] as compared to rural population [28.7% (95% CI: 69.6,73.0)] (Institute for Public Health, 2015). Putrajaya is one of the urban cities in the country and the prevalence of physical inactivity in Putrajaya, was 32.5% which equivalent to 681,920 total population (Institute for Public Health, 2015). Thus, a study on PA among them could help to identify factors contributing to such low level of PA.

BMI status is one of the factors that influence the PAL. Based on WHO Classification for Body Mass Index (BMI), Putrajaya was the 'fattest' city in the whole country whereby 25.8% were obese and 37% were overweight as reported in the NHMS 2015 (Institute for Public Health, 2015).

Unhealthy dietary habit has been reported to be significantly associated with physical inactivity. At the same time, it also linked to other factors such as obesity which could put a person at risk of developing NCDs. Dietary habit in terms of adequate intake of vegtables and fruits among Malaysian population is low (Institute for Public Health, 2015). Among government servant and Putrajaya residents, only 7.6% and 4.4% respectively were reported to have appropriate vegetables and food intake. These data related to associated factors with physical inactivity showed the high burden of risk, which later can progress to noncommunicable diseases. Thus, there is a need of further understanding of the risk and other factors that influence the physical activity participation to help the policy maker, program managers and planners in developing policies or programs to enhance the physical activity participation.

Other factors including smoking and alcohol consumption were linked to physical inactivity and their prevalence were reported to be low among government servant based

on NHMS 2015. Regardless, some of these factors need to be explored as well (Institute for Public Health, 2015).

From NHMS 2015 also showed the government servants (33.9%) were found to be less active as compared to private sector's workers (29.6%), self-employed (23.1%) and unpaid worker/home maker (33.2%). Again, as stated earlier, the factors contributing to the lower level of physical activities among government servants were not explored. There are a few studies (Ayiesah, Leonard, Vijaykumar, & Mohd Suhaimy, 2013; Siti Affira, Mohd Nasir, Hazizi, & Kandiah, 2011) done among general workers population locally but there is lack of previous study on physical activity done on the health staff specifically in Malaysia.

1.3 Significance of study

Physical activity has been identified as one of the key indicators in nine voluntary global targets for NCDs, by 2025. The target is to have a 10% relative reduction in the prevalence of physical inactivity, against a baseline in 2010. Therefore, this study not only can help to know the current status of the PAL among studied population, but it could also help to provide additional input to achieve the target set by MOH as well as the WHO.

As there is lack of study done among health staff locally in terms of PAL, this study could help providing the baseline information on PAL among Ministry of Health Malaysia (MOH) staff and help other researchers to explore more on the topic in future.

This study also can help to determine the level of physical activities and identify the factors associated among health staff in Department of Public Health, Ministry of Health Malaysia Headquarters (MOH HQ), Putrajaya. Findings and predictors determinations found from this study also can assist the policy makers to plan and develop suitable programs to accommodate the workers in health sectors or even other government sectors.

Individual that works in MOH facilities are believed to be exposed to various health messages and programs at workplace. This study could help promoting and creating awareness among health staff regarding PA.

1.4 Research questions

1) What is the prevalence of physical inactivity among health staff in the Public Health Department, MOH HQ, Putrajaya?
2) What are the factors that associated with physical inactivity among health staff in Public Health Department, MOH HQ, Putrajaya?
3) What are the predictors of physical inactivity among health staff in Public Health Department, MOH HQ, Putrajaya?

1.5 Objectives of the study

1.5.1 General objective

To measure the prevalence of physical inactivity and identify its associated factors among health staff in Public Health Department, Ministry of Health Malaysia, Putrajaya.

1.5.2 Specific objectives

1) To measure the prevalence of physical inactivity among health staff in Public Health Department, Ministry of Health Malaysia, Putrajaya.
2) To identify the socio-demographic factors (age, gender, ethnicity, marital status, income, occupational status and educational level), smoking status, health status (Body Mass Index and chronic disease status) and physical activity barriers (personal, social environment and physical environment).
3) To determine the association of socio-demographic factors, lifestyle factor, occupational factor, health status and physical activity barriers with physical inactivity.
4) To determine the predictors of physical inactivity.

1.6 Hypotheses

1) There is a significant association between socio-demographic factors and physical inactivity among health staff in the Public Health Department, Ministry of Health Malaysia, Putrajaya.
2) There is a significant association between smoking status and physical inactivity among health staff in the department.
3) There is a significant association between occupational status and physical inactivity among health staff in the department.
4) There is a significant association between health status and physical inactivity among health staff in the department.
5) There is a significant association between physical activity barriers (personal, social environment and physical environment factors) and physical inactivity among health staff in the department.

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