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KNOWLEDGE AND PRACTICE OF ROUTINE MEDICAL CHECK-UP AMONG ELDERLY IN KLINIK RAWATAN KELUARGA (KRK), HOSPITAL UNIVERSITI SAINS MALAYSIA (HUSM)

by

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Dissertation submitted in partial fulfillment of the requirements for the degree of Bachelor of Health Sciences (Nursing)

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CERTIFICATE

This is to certify that this dissertation entitled:

'Knowledge and Practice of Routine Medical Check- up Among Elderly in Klinik Rawatan Keluarga (KRK), Hospital Universiti Sains Malaysia (HUSM)'

Is the bona fide record of research done by

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During the period June 2006 – April 2007

under my supervision.

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PREFACE

The idea of doing this study came when I was training as a nurse trainee in medical and surgical ward in Hospital Universiti Sains Malaysia (HUSM). I started to realize that older people forms quite a big population of in-patients with multiple diseases. Most of them were having lack of knowledge about diseases they had especially for the first time being diagnosed. Over the weeks, I made a decision to conduct a study about their practice and knowledge of common screening: medical check-up.

This study aims to provide information of their practice in routine medical check-up. It includes the knowledge, practice and attitude. The focus aspect of it is our elderly. Patients' variety factors of sociodemographic were considered as it influences their practices and attitude. Their basic knowledge in routine medical check-up was measured by instruments of questionnaires. From the data collected, analysis was done by using SPSS Version 12.0.

At the end of this report, a discussion from the findings will give valuable information that can be implemented by all people in caring elderly especially health care provider.

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LISTS OF SYMBOLS, ABBREVIATIONS OR NOMENCLATURE

ADL	Activities of Daily Living
ANOVA	Analysis of Variance
HUSM	Hospital Universiti Sains Malaysia
KRK	Klinik Rawatan Keluarga
n.s	Not Significant
SD	Standard Deviation
USM	Universiti Sains Malaysia

ABSTRACT

Objective

To examine elderlys' knowledge, health practice and attitude toward routine medical check-up.

Design and setting

A cross-sectional descriptive study was conducted at Klinik Rawatan Keluarga (KRK), Hospital Universiti Sains Malaysia (HUSM).

Methods

A convenience sample of 90 men and women aged 60 years and above, completed answering questionnaires of sociodemographic data, knowledge of routine medical check-up, practice and attitude.

Findings

Educational level and socioeconomic factor (income) influenced elderlys' knowledge and attitude. Meanwhile, health status influenced elderly practice.

Conclusions

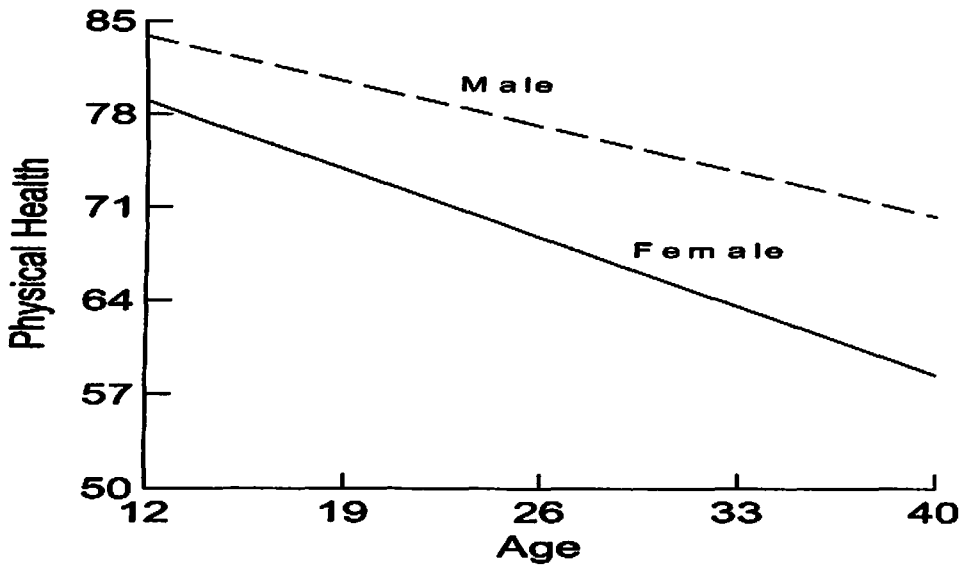
The study revealed that one's knowledge does not necessarily reflect one's actual practice status. This finding deserves the attention of older adult and health care providers who consider patient awareness as fundamental to behavioral changes and health centre visits for regular medical check-up.

CHAPTER 1

INTRODUCTION

1.1 Background

Ageing is a natural process that happens to all people. Because of ageing process, our physiological body will also change. The function of our organs, body systems and sense will decrease therefore elderly is more vulnerable to any disease. Ageing process increases with health problems. External and internal factors will cause health problems. However, we are able to control some factors such as life style, diet and exercises. We can't change genetic factors. Either female or male, there will be changes in their physical health status consistently as their age increase. Apart from that, physical health of female decreased more compared to male. The change of physical health with age is shown by Figure1 below.



(Henian & Patricia, 2006)

Figure 1: The change of physical health with age

During the duration from January to December 2004, 237,488 older people (14.82% from the whole estimation of elderly in this country) came to health clinic as new cases (Malaysian Health Ministry, 2006). The increasing numbers of older people seeking for health service every year showed that we need more health service for them. The increasing number of elderly every year is showed as Table 1 below.

Table 1: Population age 65 and above (% of total)

Rank	Country	2003	2015
25	Singapore	6.5	13.3
33	Brunei Darussalam	2.4	4.3
62	Malaysia	3.5	6.1
73	Thailand	5.4	9.3
84	Philippines	3.0	4.9
108	Viet Nam	4.6	5.6
110	Indonesia	4.2	6.4

(United Nations, 2002)

Health program for elderly is being managed in government health centres in the whole country. Health for elderly has been introduced in line with National Policy for the Elderly. There are many activities performed for older people in government health centres. Examples are screening and health evaluation, and medical check-up and treatment. Its purpose is to achieve vision of health of older people: older people will achieve optimum health and have quality in their whole life (Malaysian Health Ministry, 2006). Primary preventing of diseases includes screening for the disease. It can be done through medical check-up. Until December 2004, 570 (66%) health clinics in the whole country serve this service for elderly (Malaysian Health Ministry, 2006). Medical check-up for older people

can be done in any health clinics which run Health Program for Older People. It is advisable by Malaysian Health Ministry (2006) to do it twice a year or once in 6 months especially those who are at risk to get disease such as obese or genetic.

There are many advantages of attending medical check-up. It includes knowing our health status, early detection of disease, getting early treatment, avoid the complications of the disease, and getting the opportunity to discuss and understand about health (Malaysian Health Ministry, 1998). Out of doing the medical check-up, we can detect variety of diseases that include hypertension, diabetes, heart disease, cancer, cataract, glaucoma, hearing problem and dentistry problem. The leading chronic conditions among those aged 70-plus in 2006 were arthritis (58%), hypertension (45%), hearing impairments (30%), heart disease (21%), cataracts (17%), orthopedics impairments (16%), and diabetes (12%) (Haber, 2003).

1.2 Problem statements

Many programs have been set up to maintain elderly health status. For example, 'Health for elderly' program had been introduced by Malaysian Health Ministry since 1995. It corresponds with the increasing number of elderly in our country every year. It is estimated that in 2020, out of all the citizens in this country, 11.3% are older people (Malaysian Health Ministry, 2006). One of the activities done in this program is screening via medical check-up.

Knowledge of routine medical check-up is important to prevent or control disease among our elderly. We do not know how far our elderly know about the routine in medical check-up and their health practice. There are many problems related with aging and sociodemographic factors (age, sex, race, marital status, educational level, socioeconomic, social support and health status) that prevent elderly to attend for medical check-up. This research is carried out for the reason to assess factors influence elderlys' knowledge, practice and attitude in routine medical check-up. This study will use Health Behaviour Model to explain the variation in formal health services utilization entirely among elderly.

1.3 Objectives

1.3.1 General objective

To examine elderlys' knowledge, health practice and attitude in routine medical check-up.

1.3.2 Specific objectives

1.3.2.1 To examine the sociodemographic factors (age, sex, race, marital status, educational level, socioeconomic status, social support and health status) patterns elderlys' knowledge, practice and attitude in routine medical check-up.

1.3.2.2 To examine the basic knowledge in routine medical check-up patterns elderlys' practice and attitude.

1.4 Research questions

1.4.1 Do sociodemographic factors (age, sex race, marital status, educational level, socioeconomic status, social support and health status) influence elderlys' knowledge, practice and attitude?

1.4.2 Do knowledge of routine medical check-up influence elderlys' practice and attitude?

1.5 Significance

Older people need more treatment and medications because of diseases or complications of ageing process (Harber, 2003). As stated by United Nations (2002), the numbers of older people increase every year. Therefore, health service should able to afford and deal with their health problems. The request for health service increase, and at the same time, quality of service should be maintained. In Malaysia, this matter will increase costs of services as the payment for the service by patient is cheaper compared to the real costs for the instruments and appliances used. It also gives more burdens to the health care provider. If the prevention or detection of the diseases can be done earlier, the complications of the diseases can be avoided. One of the detection of diseases is by knowledge of the health service (Penning & Margaret, 1995). Besides, this study will measure the factors in Health Behaviour Model to prove its significant influencing knowledge, practice and attitude of routine medical check-up among elderly in Klinik Rawatan Keluarga. It will also identify some other factors influencing their

knowledge, practice and attitude. From the result, the weakness in performing routine medical check-up for the older people can be improved.

1.6 Hypothesis

1.6.1 Sociodemographic factors: Age influence elderlys' knowledge, practice and attitude.

1.6.2 Sociodemographic factors: Sex influence elderlys' knowledge, practice and attitude.

1.6.3 Sociodemographic factors: Race influence elderlys' knowledge, practice and attitude.

1.6.4 Sociodemographic factors: Marital status influence elderlys' knowledge, practice and attitude.

1.6.5 Sociodemographic factors: Educational level influence elderlys' knowledge, practice and attitude.

1.6.6 Sociodemographic factors: Socioeconomic influence elderlys' knowledge, practice and attitude.

1.6.7 Sociodemographic factors: Social support influence elderlys' knowledge, practice and attitude.

1.6.8 Sociodemographic factors: Health status influence elderlys' knowledge, practice and attitude.

1.6.9 Knowledge of routine medical check-up influence elderlys' practice and attitude

1.7 Definition of operational terms

1.7.1 Elderly

Elderly is defined as any persons with age 60 years old and above (Malaysian Health Ministry, 2006). However, aged can not be defined strictly base only on age. In biologically adult of 45 years old with health problem is older than healthy elderly of 60 years old (Norlaila, 2006)

1.7.2 Routine medical check- up

Routine medical check-up for elderly is referred to the Program of Health for Older People since 1993 by Malaysian Health Ministry which consists of 14 examination and test. The best selection, practice and frequency are variable according to the institution and policy. It is advisable by Malaysian Health Ministry (2006) to do it twice in a year or once in 6 months. Medical check-up for elderly can be done in any government health centre in the whole country that establishes the service of Program of Health for Older People.

1.7.3 Health Behavioural Model

The model views the use health services as a function of the predisposing (age, gender, marital status and previous illness), enabling and limiting (Informal and community support, resources, knowledge of services and area of residence), and need (acute or chronic illness, functional disability and perceived health status) characteristic of the individual (Penning & Margaret, 1995).

CHAPTER 2

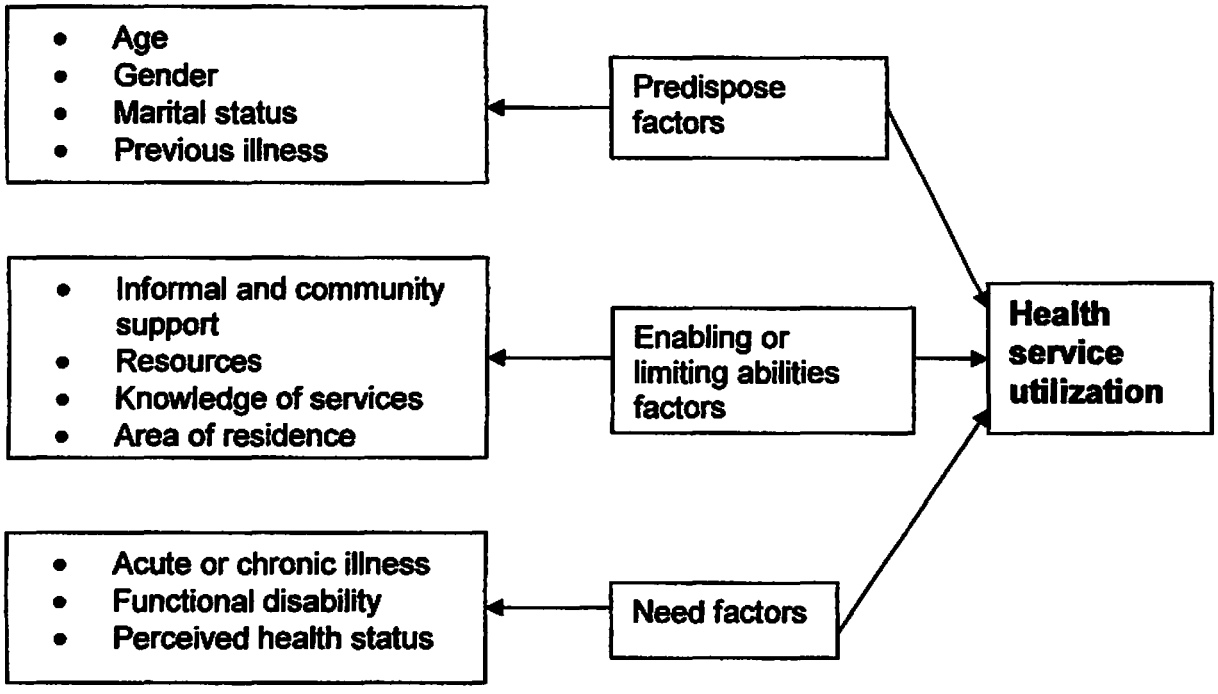
LITERATURE REVIEW

2.1 Conceptual model

This study is driven by the health behaviour model. This model explained the utilization of medical check-up services among elderly. Health behaviour model by Andersen & Newman (1973) has been used extensively by gerontologists to help in explaining the variation in formal health services utilization by elderly Americans (cited in Kart, 1994). The predisposing, enabling, and need characteristics specified in the behavioural model of health services utilization are used to predict knowledge of routine medical check-up among elderly. Basically, according to Wollinsky and Callahan (1994), the behavioural model views the use of health services as a function of the predisposing, enabling, and need characteristics of the individual (cited in Kart, 1994).

Selection of the variables in this study is referred to the factors that involve in health behaviour model. The prevailing model by Andersen and Newman (1973) conceptualizes health service utilization as a function of: factors predisposing individuals to make use of services such as age, gender, marital status, and previous illnesses: factors enabling or limiting individuals' abilities to access services including the availability of informal and community supports and resources, knowledge of services, and area of residence: and need factors such as acute or chronic illness, functional disability, and perceived health status (cited in

Penning & Margaret, 1995). However, only some factors in this model will be measured. The variables are age, gender, marital status, previous illness, informal support, knowledge of service and acute or chronic illness.



(Penning & Margaret, 1995)

Figure 2.1: Health Behaviour Model

2.2 Older people and health

Older people are always related with ageing process. Its deteriorations will result changes in older peoples' activities of daily life especially dependency. Ageing is associated with a deterioration of various physiological capacities, such as muscle strength, aerobic capacity, neuro-motor coordination, and flexibility (Singh et al., 2006). Dependency life will create more problems related with psychology. A high

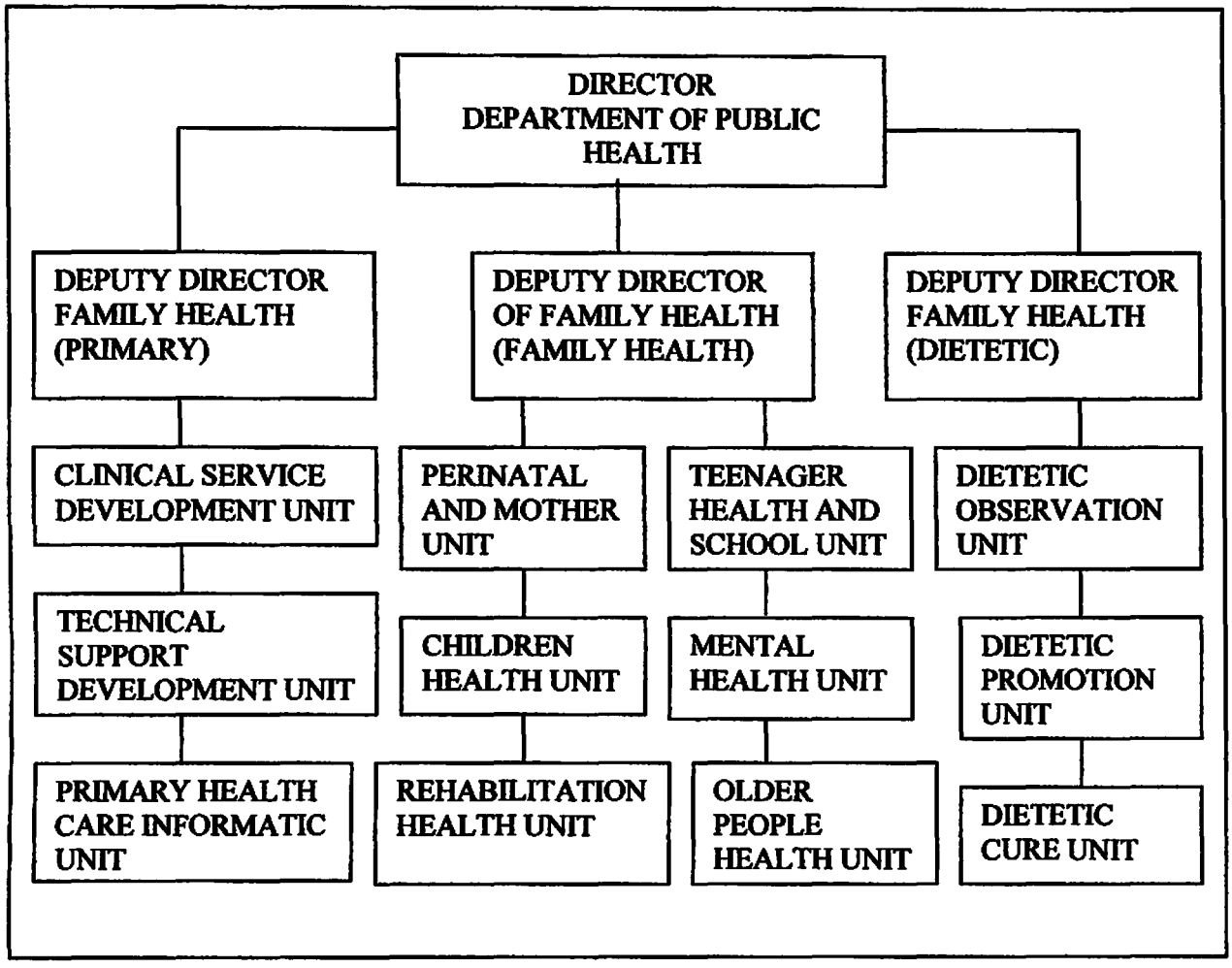
prevalence of different health complaints is common among the older and that there is a high possibility of several health complaints being present simultaneously (Borglin, Jakobsson & Edberg, 2005). Because of the health problem related with ageing, it is a necessary to assess their health service utilization (medical check-up) to ensure the maintenances of their health and lower the risk of complication from disease. Elderly persons are high users of medical-consultation time and health facilities (Kart, 1994).

However, age can not be defined strictly based only on age. As well as stated by Norlaila (2006), in biologically adult of 45 years old with health problem is older than healthy elderly of 60 years old. Apart from that, the elderly who were older and had more IADL disabilities tend to move into institutions, at least temporarily (Chen, 2004). As the number of elderly increased every year, prolonging life is essential to maintain their quality of life. Prolonging life of the elderly aims to maintain quality of life in terms of autonomy, as long as possible, disability must be at the centre of interest particularly among the elderly population (Jittapunkul et al., 2003). Age differences influence elderly to perform medical check-up. Jittapunkul et al. (2003) found that a higher percentage elderly age 61-70 years (40.9%) attend health centre compared to (22.8%) elderly age more than 70 years old. The health care needs of the elderly differ substantially from those of younger patients. This is supported by Poi (2002) said that 'Not only is the presentation of disease often different, but its management varies with the social and economic environment'.

2.3 Routine medical check-up

Primary prevention is very important to avoid further complication of the diseases. Earlier intervention can reduce the suffering of diseases. Attending health centres for medical check-up regularly is very effective to detect the diseases such as hypertension, cardiovascular diseases or diabetes. The effective management of diabetes rests on the consistent application of preventive and clinical interventions including efforts to detect diabetes, promote effective self management, reduce the incidence of complications and increase the coping skills of people with diabetes and related conditions (Shafiee, Fatanah & Noor, 2004). Health Education Division of Malaysian Health Ministry (2006) encourage people to attend health centre for blood pressure check-up once in 1 to 2 years (or more frequent) to detect problem associated with high blood pressure before it becomes worse or can cause damage to the organs. As older people have high risk of developing disease, they should do it more frequent. It is consistent with the recommendation by Malaysian Health Ministry in Program of Health for Older People since 1995.

Health Program for Elderly has been introduced by Malaysian Health Ministry since 1995. This program is managed by Department of Family Health Development. This department was organized by Department of Public Health in 1996. Since that, all units in Department of Public Health were conducted intensively. It includes Health Program for Elderly. The organization chart of Family Health Development Division is showed in next page as Figure 2.2.



(Ministry of Health Malaysia, 2006)

Figure 2.2: The organization chart of Family Health Development Division

Routine medical check-up can be an effective screening among elderly to detect any diseases or disability. As stated by Clarke and Anderson (1979) and Guzick (1978), cervical cancer has a well accepted effective screening test, Papanicolaou (Pap) smears (cited in Whitney, Daniel & Jean, 2002), and a high cure rate when detected early (Ries et al., 1997; cited in Whitney et al., 2002). Medical check-up can be an indicator to assess individual health status. This study will examine only the routine practice of medical check-up as suggested by Malaysian Health Ministry (2006) in Health Program for Elderly. The purpose of this

program is to improve accessibility to the health services among them. This program was very systematically planned as medical check-up can be done in any government health centres in the whole country that serve this service. There are 14 types of examination done in routine medical check-up in this program. The source for doing medical check-up is wide and it was subsidized by our government. Having a primary source of medical care is a powerful mediator for improving access to health services (Merzel & Moon-Howard, 2002).

There are 14 types of regular examination suggested by Malaysian Health Ministry (2006) for routine medical check-up:

1) Physical assessment

It includes examination of blood pressure, pulse, heart, lung and others (Malaysian Health Ministry, 1998).

2) Weight and height

Its purpose is to measure Body Mass Index (BMI). Measurement:

$$BMI = \frac{\text{Weight (Kg)}}{\text{Height (m)} \times \text{Height (m)}}$$

Healthy BMI is between 20 to less than 25.

3) Blood test

Blood glucose test is important in assessing diabetes. It also can be used to identify those at risk of atherosclerotic heart disease through lipoprotein in blood.

4) Urine test

It is an important tool in the diagnosis of urinary disorders and urine abnormality.

5) Vision

The measurement is done according to clinic-based Snellen score (Harries, Landes & Popay, 1994). Older people especially who has vision problem or any symptomatic eye problem need to see doctor immediately for further treatment.

6) Hearing

Assessment of hearing is done by performing Tuning Fork Test. However, if the older people have any symptoms related with hearing problem (e.g. trauma), they need to see doctor immediately.

7) Dentistry

8) Functional status

This examination is done to assess the ability in doing Activities of Daily Living (ADL). It is advisable to do it as soon as possible if they have any symptoms related with it.

9) Cognition

The mental status will only be assessed if it is needed.

10) Urination problem

It includes difficulty in passing urine, blood in urine and others.

11) Assessment for screening cancer

It includes clinical breast examination, Pap smear and mammography. Clinical breast examination should be done every year by the doctor. Self breast examination should be done every month on the same date. For old older people, they are advised to do Pap smear once in 6 month. Women who were at age 50 and above should do mammography once a year.

12) Chest x-ray

This assessment will only be done if it is a necessary.

13) Electrocardiogram

This assessment is done to see the action of heart muscle.

14) Refer to specialist

It will be done for further investigation, confirming the diagnosis and treatment.

2.4 Knowledge of routine medical check-up and practice

In Malaysia, health service continues to develop via Malaysian Health Ministry. However, without knowledge of the facilities, services will not be used effectively. The mission of the program can not be achieved. The statistics of disabilities and diseases among elderly will remain at the same level or increase. It is a wasteful of money to provide the facilities as it were not used optimally. As compared to man, a higher percentage of women visited medical practitioner (Sendino et al., 2006). However, they have the right to choose whether to do medical check-up or not. Their autonomy of rights should be based on information which was thought rationally. As stated by President's Commision (1982), this autonomy requires the possession of a set of values and goals, the ability to communicate and understand information, and the ability to reason and deliberate choices (cited in Sansone et al., 1995).

The goal of this research is to evaluate our elderly basic knowledge of medical check-up and their practice. This study should be done as most of our elderly refuse to see a physician and they prefer self health care. Self health care was defined by Coppard et al., (1984),' All the actions and decisions that an

individual takes to prevent, diagnose, and treat personal ill health; all individual behaviors calculated to maintain and improve health; and decisions to access and use both informal support systems and informal medical services' (Kart, 1994). Doing nothing can also be included as self health care.

Some sociodemographic indicators have been used to prove the relationship with their practice. Besides the health behavior model, it was also supported by Plotnikoff et al. (2001) in their study of heart disease said that 'Major national and international initiatives call for a broad understanding of heart health and its determinants, which includes addressing the interaction of life style and biological factors, socioeconomic environment (e.g., gender, income, social status, employment, education, culture), physical environment, and access to and availability of appropriate health services. Older people must be alert with the early symptoms of disease and attend health centres for medical check-up as soon as possible. It is advised to attend once in 6 month especially for those who have the risk factors to get disease. The primary modifiable risk factors for heart disease have been identified as hypercholesterolemia, hypertension, smoking, physical inactivity and recently obesity (Plotnikoff et al., 2001). Apart from that, advances age is additional factors that increase risk to the older people. More than 75% breast cancer is among women age 50 years and above and the risk for breast cancer among women age 70 years old is twice compared to women age 50 years old (American Cancer Society, 2002).

Assessment of vision is very important especially for the elderly who has vision problem or eye trauma. Diminished vision is associated with decreases in leisure activities, Instrumental Activities of Daily Living (IADL) performance and social function, Activities of Daily Living (ADL), and compromised mobility, : it is also associated with increases in hip fractures, falls, depression, physician visits and hospitalizations, mortality, and family stress (Crews, 2004). The situation is similar with hearing loss. Some degree of hearing loss is present in more than 33 percent of persons over 65 years of age and in more than 50 percent of persons older than 85 years (Mouton & Espino, 1999). According to Mouton and Espino (1999), hearing loss is associated with decreased functional and psychosocial impairments; increased social isolation, depression, and rates of dementia; it is also associated with accelerated cognitive decline in dementia. Declines in vision and hearing are associated with decreased quality of life.

In measuring the normal weight, BMI indicator will be used as an indicator. Unintentional weight was associated with increased risk for mobility limitation in the extremely obese, which was defined as BMI ≥ 35, and the normal BMI, which was defined as BMI < 25 and in persons with BMI 25 to 29.9, intentional weight loss and weight fluctuation with any intention increased the risk for mobility limitation (Lee et al., 2005). Thailand Health Research Institute (1996) stated that over one-third of the Thai elderly have a Body Mass Index (BMI) below 20 and 25-50 percent of them have low concentrations of hemoglobin in their blood (cited in Jittapunkul et al., 2003). Urine test (urinalysis) is important in determining urine composition and possible abnormal components such as glucose and protein, or infection.

Urine is a product of blood filtration, so much of the information concerning health or disease states carried in the blood can also be found in the urine (George-Gay & Chernecky, 2002).

Screening cancer among female is done through clinical breast examination, Pap smear and mammogram. Screening recommendations for Pap smear are not entirely consistent from organization to organization, especially for older women (U.S. Preventive Services Task Force, 1996; Whitney et al., 2002). The recommendation for doing Pap smear is from National Cancer Society of Malaysia (2004), every six month. In this study, the recommendation for mammography used is once every year for those ages 50 and above (National Cancer Society of Malaysia, 2004). According to National Cancer Registry (2002), cervices cancer becomes the second killer after breast cancer which is 47% incidence in Chinese population, 42.6% Malays and 10.4% Indian (Harian Metro, 2006).

Although Health Ministry has served the facilities, the incidence is still high. Ashikin (2006) said,' this miserable condition happens because lack of awareness about cancer and the facilities served by government' (Harian Metro, 2006). The differences of races will influence elderly practice and attitude toward routine medical check-up. According to National Cancer Registry (2002), breast cancer in Malaysia has its highest incidence in the Chinese population (1 in 14 chance over the lifetime for getting breast cancer, compared to 1 in 24 for the Malays) (Ho, 2006).

There are some researches that support the assumptions done in this study. As stated by Cafferata (1987) and Evashwick et al. (1984), the use of health related services has frequently been found to be greater among unmarried (including divorced, separated widowed, and never married) (cited in Penning & Margaret, 1995). In the similar study done by Jittapunkul et al. (2003) found that married (67%) and married-male (84.2%) attend health centre. Utilization of medical check-up service is different between male and female. According to Merzel & Moon-Howard (2002), women are more likely to receive cholesterols and blood pressure screening than man. Family support is important to encourage elderly to attend health centres for medical check-up. According to previous study, Coe et al. (1985) reported greater utilization of hospital emergency room services among older adults without family support networks (cited in Penning & Margaret, 1995). The support from health care provider for elderly is also important. People who received attention and encouragement from their health care providers regarding their blood pressure levels are more alert to proper care regimens (Lee, 2006).

Some examination in routine medical check-up need to be paid by patient as the cost to do it is expensive, such as mammography. For elderly who do not work or has lower payment will think twice to do the examination. Socioeconomic factors played an important role in determining whether people obtained initial entry into the health care system and where they obtained care (Merzel & Moon-Howard, 2002). As well, Moorin & Holman (2006) suggest that important contributing factors included geographic isolation, poor transport links, shortage of health care providers and an overall lower socioeconomic status. Elderly who

works in agriculture field has a higher percentage attendance to health centres (Jittapunkul et al., 2003). Apart from knowledge, attitude toward maintaining their health are poor. Rates of chronic illness are highest among elderly persons, yet most illness symptoms do not lead to a medical consultation regardless of the severity of the symptoms (Epsom, 1969, Ingham and Miller, 1979, Morrell & Wale, 1976; Kart, 1994).

Generally, older people do not decide something without considering the people surround them. According to Penning and Margaret (1995), information as well as decision making regarding formal services often involves family members and that the informal network can be important in recognizing and affirming the need for formal assistance (Auslender & Litwin, 1990), providing referrals (Bas & Noelker, 1987) as well as tangible assistance (e.g., transportation to the physician's office or hospital, financial aid) that may facilitate access and entry into the formal care system (Kraus, 1990). Knowledge of routine medical check-up is important to enable older people practice properly. Informational support seems likely to enhance service contact and use particularly in terms of services like home care and perhaps certain medical services as well, where generalized knowledge concerning availability is not as evident (Penning & Margaret, 1995).

There are many factors influencing elderly to come for routine medical check-up. Demographic factors such as lower income and fewer years of education are associated with lower screening rates (Blackman et al., 1999; Martin et al., 1996; Mamon et al., 1990; Hayward et al., 1988; cited in Whitney et al.,

2002). The independent variables can be classified into two groups: sociodemographic and health service utilization characteristics (Whitney et al., 2002). Socially privileged groups can be observed to have better health status, whether social position is measured by income, occupational class or education (Stroneggar, Freidl & Rasky, 1997). In quite similar study done by Jittapunkul et al. (2003) found that elderly who have primary school level attend health centres more frequent compared to other educational level.

Percentage distribution of the causation bringing the elderly to health center includes: Follow up or doctor visit appointment (54.3%), felt ill (44.2%), and regular check-up (1.5%) (Jittapunkul et al., 2003). Limitation in this study included the use of cross-sectional data to look at behavior and another limitation was self report makes them tend to greatly overestimate their use of screening (Suarez et al., 1995; Whitney et al., 2002).

CHAPTER 3

METHODOLOGY

3.1 Study design

This study used cross-sectional descriptive approached.

3.2 Location

This study was carried out in Klinik Rawatan Keluarga (KRK), Hospital Universiti Sains Malaysia (HUSM) which is a university-based teaching hospital. KRK is one of the clinics in HUSM. It deals with the out-patient either the patient comes with appointment or by themselves. The subjects were taken from KRK.

3.3 Samples

3.3.1 Subjects

This convenient sampling consisted of 90 older adults' age 60 years and above. All of these subjects were recruited from KRK, HUSM.

3.3.1.1 Inclusion criteria:

Participants were patients 60 years old and above, got treatment in KRK, did not have their own home set measuring for their blood pressure, urine, glucose and others, oriented to time, person and place and able to understand and communicate in Bahasa Malaysia or English.

3.4 Sample size

The calculation of the sample was taken from the previous study done by Haque (2001). Data was collected from sample of 200 elderly with 87.6% went for institutional treatment (Haque, 2001). The sample calculation was done by using 'The parameter was a proportion' by Naing (2003).

$$n = \left[\frac{z}{\Delta} \right]^2 p(1-p)$$

P=0.876, $\Delta = 0.05$ and z=1.96

$$n = \left[\frac{1.96}{0.05} \right]^2 0.876\,(1-0.876) = 166.9$$

The samples of 167 older people were required to be sample at analysis stage. However, a total of 95 people participated with 90 (90%) providing all the data.

3.5 Data collection

After permission from the Hospital Universiti Sains Malaysia (HUSM) and the approval of the Members of Research and Ethics Committee of School of Medical Science University of Science Malaysia were obtained on a scheduled date the investigator met with all older adults who agreed to participate and invited those who were eligible to take part in the study. Convenience method would be used to select the subjects. Individuals who agreed to participate were given a short explanation about the study. The subjects were told to complete the questionnaires truthfully in providing the required information. Those who wanted to continue were

asked to complete se of questionnaires at the KRK fro the duration of 20 minutes. The entire questions should be filled up at the same time. Those who had problem such as couldn't read, eye problem or did not understand the questionnaires might for assistance from the investigator or their family members at that time. A total of 95 people participated, with 90 (95%) providing all the data.

3.6 Instruments

The new modified questionnaires would examine knowledge and practice of routine medical check-up as suggested by Ministry of Health Malaysia (1993) in Health Program for Elderly and U.C.L.A Medical Center Geriatrics Pre-Visit Questionnaire. The required data was collected by guided questionnaires followed by filling up the form. The questionnaires were divided into 4 parts:

3.6.1 Part A

Sociodemographic data was dependent variable including age, sex, race, social support, marital status, educational level, socioeconomic and health status. Socioeconomics variable were employment status (yes or no), occupational class and monthly income (no income, less than RM 1,000, or RM 1,000 and above). Health status variable was measured by presence of medical illness. They would also be asked about social support from others (nobody, spouse, children or friends and neighbours).

3.6.2 Part B

Knowledge was dependent variable when it was tested with sociodemographic data. It became an independent variable when it was