



THE THIRD
NATIONAL HEALTH AND MORBIDITY SURVEY
2006
(NHMS III)

HEALTH UTILIZATION

INSTITUTE FOR PUBLIC HEALTH
NATIONAL INSTITUTES OF HEALTH
MINISTRY OF HEALTH
MALAYSIA
2008



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LIST OF RESEARCH TOPICS

Topic 1	Health Expenditure
Topic 2	Oral Health
Topic 3	Load of Illness
Topic 4	Health Utilization
Topic 5	Injury and Risk Reduction Practice
Topic 6	Physical Disability
Topic 7	Asthma
Topic 8	Dengue Prevention Practice
Topic 9	Health Information
Topic 10	Physical Activity
Topic 11a	Smoking
Topic 11b	Alcohol
Topic 12	Hypertension and Hypercholesterolemia
Topic 13	Diabetes Mellitus
Topic 14	Infant Feeding
Topic 15	Nutritional Status
Topic 16	Women's Health
Topic 17	Sexual Behaviour
Topic 18	Psychiatric Morbidity

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HEALTH UTILIZATION

CHAPTER I:
Health Utilization

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MESSAGE FROM THE DIRECTOR GENERAL OF HEALTH MALAYSIA

Since independence, Malaysia has achieved remarkable progress economically and socially, notably in the health sector, through a well planned and comprehensive health care delivery system. However, Malaysia's health care system still has to grapple with many challenges, particularly the rising costs of health care and the increasing demands and expectations for quality care by our consumers. In this respect, the Ministry of Health formed the 'National Institutes of Health' to spearhead health research that will provide the body of evidence to help formulate health policies and create new tools to measure health impacts arising from the series of interventions made in the provision of health care. This will lead to an environment of better governance.

The first National Health & Morbidity Survey (NHMS) was conducted in 1986 by the Institute for Public Health (IPH) which is currently one of the research organizations under the umbrella of the National Institutes of Health (NIH). IPH was also given the task of conducting the second NHMS II in 1996 and the current NHMS III in 2006. Data and information gathered by these surveys are consistently and extensively been used by the Ministry of Health in formulating the Malaysian Health Plans and evaluating the intervention programmes.

The publication of the current NHMS III report would generate much interest amongst of all health care stakeholders in the country as well as international health organizations. It is my sincere wish that the data and information generated by NHMS III be fully distributed, discussed and utilized to enhance further the provision of health care in this country. The data generated on the national health and health-related prevalence would be useful in assessing the national health burden as well as allowing for international comparison of health systems achievements.

I would like to take this opportunity to congratulate all those directly involved in the conduct of the survey, namely members of the National Steering Committee, the Advisory Committee, Research Groups and the Working Committee for their untiring efforts in the planning and conduct of the survey as well as publication of the reports. I would like to specially place on record the Ministry's appreciation of the excellent work done by the Principal Investigator and his team and for their dedication and tenacious efforts in spearheading this project to fruition. The Ministry of Health is committed to conduct these National Health and Morbidity Surveys on a regular basis and hope that IPH will continue to provide the leadership in conducting future National Health and Morbidity Surveys in this country.

Thank you.



Tan Sri Datuk Dr Hj. Mohd Ismail Merican
Director General of Health, Malaysia.

MESSAGE FROM THE DEPUTY DIRECTOR GENERAL OF HEALTH (RESEARCH AND TECHNICAL SUPPORT)

The Research and Technical Support Programme of the Ministry of Health emphasizes the need for research in supporting decision making and planning the activities in the Ministry. Only then can we ensure that every decision made either in planning resources or providing services to the people is supported by evidence based information and ensuring better results and outcome. We would certainly prefer local expertise rather than depend on foreign experts to carry out local research.

Under the umbrella of the National Institutes of Health, the Institute for Public Health has actively been involved in conducting research in public health and the National Health and Morbidity Survey is one of the major research conducted by IKU. This is the third time IKU has been given the responsibility to conduct such a mammoth task. I am very pleased that a lot of improvement have been made in the way this survey was conducted based on the experience learnt during the first and second surveys. However, due to the nature of the community survey, not all diseases and health issues were able to be covered in this survey. The research teams had to conduct an extensive literature reviews for relevant and up to date information on the health status of the Malaysian population.

I believe that the information in these reports are extremely valuable to all decision makers at the National State and district levels as well as those interested in the health of the Malaysian population. It can be a tool in providing guidance in developing and implementing strategies for the disease prevention and control programme in Malaysia.

I would like to take this opportunity to congratulate the research team members who have successfully undertaken and completed this survey. I would also like to thank all individuals and agencies who directly or indirectly made the completion of this survey possible.

The Institute for Public Health again gained a feather in its cap by successfully completing the Third National Health and Morbidity Survey.



Datuk Ir. Dr. M. S. Pillay,
Deputy Director General of Health (Research and Technical Support).

MESSAGE FROM THE DIRECTOR OF INSTITUTE FOR PUBLIC HEALTH

This is the third time the Institute for Public Health (IPH) was given the task to conduct the National Health and Morbidity Survey. The frequency of the study is every 10 years and I am proud that the Institute is able to conduct the surveys successfully since it was first initiated in 1986.

I would like to take this opportunity to thank the Director-General of Health Malaysia, Tan Sri Datuk Dr. Hj. Mohd Ismail Merican, and the Deputy-Director General of Health (Research and Technical Support), Datuk Ir Dr.M.S. Pillay, whose invaluable support and guidance were instrumental in the successful completion of the third National Health and Morbidity Survey (NHMS III). Our appreciations are also extended to all members of the Steering Committee and the Advisory Committee of NHMS III.

I would like also to take this opportunity to congratulate the Principal Investigator and his Project Team Members in completing the NHMS III study and the publication of its report. The NHMS III was made possible through the collaboration of all agencies. The meetings, workshops and conferences that were organised, met their intended objectives and the hard work put up by the field staffs, ensured the three months data collection productive and successful.

My sincere gratitude also goes to Dr.Nirmal Singh, the former Director of the Institute for Public Health, Chairman of the Advisory Committee for his continuous support and guidance which contributed towards the successful completion of the study.

I hope the documentation of this report will be beneficial for future reference.

Finally, I would like to thank all those involved in the survey for a job well done, in making the NHMS III a success and finally producing the national report of this survey.



Dr. Yahya Baba,
Director, Institute for Public Health.

MESSAGE FROM THE PRINCIPAL INVESTIGATOR NHMS III

It is indeed a challenging task when the responsibility was given to me to conduct this survey. I learned the hard way and gained a lot of valuable experience in leading the survey. The survey also taught me lots of new techniques and how it should be addressed which is not available in the textbook. In doing so, I also learned the meaning of friendship and honesty, how to manage people involved and manage properly the given budget.

I would like to take this golden opportunity to thank the Director General of Health Malaysia, Tan Sri Datuk Dr. Hj. Mohd Ismail Merican, Chairman of the Steering Committee for giving me the confidence, valuable support and guidance for the success of this survey.

I would also like to thank the Deputy Director General of Health Malaysia (Research & Technical Support), Datuk Ir. Dr. M.S. Pillay as Co-chairman of the Steering Committee for his patience in seeing through the survey until its completion the production of the national report.

My sincere appreciation to current Director of Institute for Public Health (IPH), Dr. Yahya Baba and former Directors of IPH, Dr. Nirmal Singh, Dr. Sivashamugam and Dr. Sulaiman Che Rus for their trust in me to carry out this survey. Their support for the survey has resulted the smooth conduct and success of the survey.

Special thanks to all State Directors, State Liaison Officers, Field supervisors, Scouts, Data Collection Team members for their full cooperation and efforts to ensure the success of the data collection. My appreciation is also extended to the Assistant Principal Investigator, Dr. Mohd Azahadi Omar, Main Research Group members, members of the Working Committee, Data Management group members, Statistics Consultant, Research group members, Research Officers and Research Assistants for their patience and tolerance of my behaviour to ensure the success of the study. Nevertheless I acknowledge a lot more can be done in strengthening the study.

I believe this report will serve as a useful reference for future surveys and helps in improving the local data sources and also add new valuable information for the Ministry of Health to use in the planning process. I also would like to encourage all research members to participate in further analysis of the data and publish the findings in peer review journals.

Thanks to everyone.



**Dr. Hj. Ahmad Faudzi Hj. Yusoff,
Principal Investigator, The Third National Health and Morbidity Survey,
Institute for Public Health.**

*A***UTHOR'S STATEMENT**

This volume is the culmination of several months of collaborative effort by the authors who strive to ensure integrity of this work.

In the process of preparing this volume, close collaboration was established between the authors and the relevant health programmes to facilitate the use of research findings.

Please note that only those who were 18 years old and above were included in this study. It also covers only incidences of recent illness / injury, for a period of 2 weeks prior to the interview.

The authors welcome any enquires, comments and suggestions for further improvement of this Volume.

*A*CKNOWLEDGEMENT

The authors would like to express sincere gratitude and appreciation to the National Health and Morbidity Survey Steering Committee and the Advisory Group for their guidance and support in the preparation and implementation of this Survey.

Gratitude and appreciation are extended to the State Directors of Health Department, State Senior Health Officers and their staff, Local Authority Health Departments and their staff whose cooperation and support had enabled this survey to be carried out successfully.

Special appreciation is extended to all research team member, working group member, field support group members, data processing members and other individuals who were directly or indirectly involved in preparing for the survey.

ABSTRACT

A cross-sectional community household survey using a structured questionnaire was conducted between the periods of April 2006 to July 2006. The objective is to describe and compare the health care utilisation in Malaysia in relation to recent illness, which is defined as reported injuries or illnesses that took place within 2-weeks recall period before the day of the survey with that of the NHMS I and NHMS II. A total of 55,748 persons responded to this module. In this survey, among those who reported recent illness or injury, 58.1% (CI: 57.1 - 59.1) sought care compared to only 42.5% in the NHMS II survey. The prevalence of seeking care was significantly high among the young age group, Indians and in the states of Perak and Kedah. About 72.9% of the respondents sought care within 24 hours from the onset of the illness or injuries, 1.2% had a time lag of more than 5 days and the remainder between 1 to 5 days. The mean distance travelled to seek care was 5.7 kilometres (CI: 5.4 - 6.0), which is further compared to the previous surveys. The long distance travelled was mainly characterized by low income level, rural setting and mainly from the states of Sarawak, Pahang and Sabah. The mean travel time to the facilities was 14.4 minutes (CI: 13.9 - 14.9), which is much lesser than the previous surveys. About 83.5% of them reported using their own transport to travel to the health care facilities. The prevalence of ambulatory care services utilisation among those seeking care for recent illness was 85.3% (CI: 84.3 - 86.3). Of these 62.1% (CI: 60.2 - 64.0) received care at private clinics. There was a high utilization of private clinics in the urban stratum, among the Chinese, non Malaysian and high income group. The prevalence of bypassing the nearest static facility was 13.5% and the main reasons cited for bypassing were perceived poor quality of care and inaccessibility. The prevalence of hospitalization in the past one year prior to the day of the survey was 5.0% (CI: 4.8 - 5.2) compared to 2.8% and 7.2% in NHMS I and NHMS II, respectively. Hospitalization was high among those 60 years & above, Indian, widower, with low education level and the unemployed. Among those hospitalized, 82.6% (CI: 80.9 - 84.3) were admitted in government hospitals, 16.9% (CI: 15.2 - 18.6) were admitted in private hospitals and the remaining in both government and private hospitals. In emergency situations, 2.5% (CI: 2.3 - 2.8) of the respondents reported had used the ambulance service. Of those who had utilised the ambulance, 90.8% reported using the MOH's ambulance while 4.1% used private sector ambulances. Among the reported problems encountered with the ambulance services were; late arrival (53.5%), unfriendly service (12.9%) and difficulty in contacting the providers (10.9%).

Table of contents

Message from the Director General of Health Malaysia	i
Message from the Deputy Director General of Health (Research and Technical Support)	ii
Message from the Director of Institute for Public Health	iii
Message from the Principal Investigator NHMS III	iv
Author's statement	v
Acknowledgement	vi
Abstract	vii
Table of contents	viii
List of tables	x
List of figures	xi
Abbreviations	xii

Chapter I Health utilization

Introduction	3
Literature review	3
The changing face of health in Malaysia	3
Changes in service provision	4
Health seeking behaviour	4
Health care utilization	5
Objective	6
General objectives	6
Specific objectives	6
Methodology	6
Scope of the study	6
Sampling design and sample size	7
Preparation of field areas and logistic support	9
Method of data collection	9
Field preparations	10
Quality control	10
Data management	10
Definition of terms / variables	11

Findings	12
Respondents profile	12
Health seeking behaviour for recent illness	12
Utilization of health services	18
Discussion	26
Health seeking behaviour for recent illness	26
Utilization of health services	28
Limitations	29
Conclusion	30
Recommendations	30
References	31
Appendix	33

Chapter II Cataract surgery

Introduction	85
Literature review	85
Objectives	85
General objective	85
Specific objectives	85
Methodology	86
Cataract	86
Findings	86
Cataract surgery	86
Discussion	88
Conclusion	88
Recommendations	89
References	90
Appendix	91

LIST OF TABLES

		PAGE
CHAPTER I		
Table 5.1	Reasons for bypassing	17
Table 5.2	Reasons for not seeking care	17
Table 5.3	Distribution of ambulance service user by provider (N=797)	25
Table 6.1	Number of health facilities in Malaysia	26
Table 6.2	Percentage of population literate (aged 10 years and above), Malaysia 1980-2004	26
Table 6.3	Comparison of distance travelled to seek health care and treatment between NHMS I and NHMS III (Peninsular Malaysia and Malaysia)	27
Table 6.4	Comparison of travel time taken to seek health care and treatment between NHMS I, NHMS II and NHMS III	27
Table 6.5	Comparison of reasons for not seeking health care between NHMS I, NHMS II and NHMS III	28
Table 6.6	Distribution of hospital admission by sector	28
CHAPTER II		
Table 5.1	Estimated number of cataract surgery performed and CSR, Malaysian 1996	87
Table 5.2	Cataract surgery rate estimates in 5 year-band, Malaysia 1996-2005	87
Table 5.3	Estimated number and proportion of cataract surgery performed at university and private health care facilities using the NHMS III findings and annual census MOH, Malaysia 2002-2005	87

LIST OF FIGURES

		PAGE
CHAPTER I		
Figure 5.1	The prevalence of seeking health care by age group for recent illness / injury	13
Figure 5.2	The prevalence of seeking healthcare by ethnicity for recent illness / injury	13
Figure 5.3	The prevalence of seeking health care by state for recent illness / injury	14
Figure 5.4	The distance travelled to seek healthcare by state for recent illness / injury	15
Figure 5.5	Prevalence of hospitalization by age group	18
Figure 5.6	Prevalence of seeking care at hospital for recent illness by state	19
Figure 5.7	Place of hospitalization by ethnicity	20
Figure 5.8	Place of hospitalization by income	21
Figure 5.9	Prevalence of ambulatory service usage by age group	22
Figure 5.10	Prevalence of ambulatory service usage by state	23
Figure 5.11	Prevalence of seeking care at ambulatory facilities by income group	24
Figure 5.12	Prevalence of ambulance utilization by state	25

ABBREVIATIONS

CI	95% Confidence Interval
CSR	Cataract Surgery Rate
DE	Design Effect
EDs	Emergency Departments
EB	Enumeration Block
FI	Face Interview
KM	Kilometer
LQ	Living Quarter
MOH	Ministry of Health
NA	Not Applicable
NES	National Eye Survey
NCHS	National Center for Health Statistics
NGO	Non Government Organization
NHMS	National Health and Morbidity Survey
PPS	Probability Proportionate to Size
RR	Response Rate
T/CM	Traditional / Complementary Medicine
US	United State
WHO	World Health Organization

CHAPTER I

HEALTH UTILIZATION



1. INTRODUCTION

In the last 50 years of independence, Malaysia has achieved considerable heights of success in many areas. The health system has matured together with the nation and is geared towards greater achievement. In the strategic planning for the national health plan, it was suggested that the system has to be made more equitable, cost effective and relevant to people's need if Malaysia is to achieve its Vision 2020 (Noorliza et al. 2006). The Vision sees the country as an advanced and socially cohesive society with a standard of living and quality of life comparable to the leading economies of the world in the year 2020 (Mahathir 1991). In line with this, the Vision for Health envisages that Malaysia will be a nation of healthy individuals, families and communities. Health is an asset as it contributes significantly to the socio-economic development of any country.

2. LITERATURE REVIEW

2.1 The Changing Face of Health in Malaysia

Health is defined as 'a state of complete physical, mental, and social well-being and not merely the absence of disease, or infirmity' (WHO 1948). Health status is measured based on several indices. The indices of health are based on the concept of absence of diseases with focus on the frequency of mortality, morbidity and disability. The common methods for 'measuring' the changes are by vital statistics (birth and death registry), administration records and national health surveys (NHMS II 1996).

Based on vital statistics and administration records, the health status of the Malaysian population has improved over the years. This is evidenced by the declining mortality rates, increasing life expectancy, and the changing disease pattern from communicable to non-communicable illnesses which are reflections of the lifestyle changes due to more affluent communities.

The crude death rate fell from 4.6 in 1996 and 4.5 in 2006. Infant mortality fell from 19.7 per 1000 live births in 1986 to 9.1 in 1996 and 6.6 in 2006 (MOH Health Facts 1986; 1996; 2006). The life expectancy at birth for males was 69.3 years and for females 74.1 years in 1996 (MOH Health Facts 1986; 1996; 2006). The life expectancy in 2006 is 71.8 years for males and 76.3 years for females (MOH Health Facts 1986; 1996; 2006).

The disease burden for Malaysia is both communicable and non-communicable diseases but there is a changing pattern. The top five disease burdens are dominated by non-communicable diseases; ischemic heart disease, mental illness, cerebrovascular disease, road traffic injuries and cancers, which is almost similar to developed nations. The communicable diseases are persistently dominated by dengue fever, tuberculosis, food poisoning, HIV, malaria and viral hepatitis (MOH Health Facts 2006).

2.2 Changes in Service Provision

In the past decade, the health care system has changed tremendously. The emergence of new technologies which include drugs, devices, laboratory tests, and imaging machinery, has seen decentralization of the traditional sites where care was only provided previously. Currently, the bulk of care no longer lies within the major government hospitals. The burden is shared by satellite hospitals, ambulatory care and public health clinics. There are changes in long term care as hospitalization for specialized needs are being catered by nursing homes, rehabilitative units, hospice and end stage renal disease treatment facilities. This is similar to the changes that have been observed in USA (Bernstein et al. 2003).

There are an increasing number of health facilities both in the public and private sectors. The number of private hospitals and the location of the private services have expanded to other smaller cities and not just concentrated in Kuala Lumpur and the capital cities of the states. Human resources distribution has changed in that the number of specialist has increased. Since 1997, Family Medicine Specialists have been stationed in the health clinics.

The increased number of health facilities in the public and private sectors and the increased number of human resources are the reflection of the Ministry's policy implementation to increase accessibility and quality of the services during the Fifth, Sixth, Seventh and Eighth Malaysia Plans.

In ensuring high quality of health care provision, the Ministry of Health are championing several common themes namely; equity, accessibility, affordability, efficiency, effectiveness, technological appropriateness, environmental adaptability and consumer-friendliness (MOH 9MP 2006). This is the thrust of the 9th Malaysia Plan (9MP) i.e. "Towards Achieving Better Health through Consolidation of Services". The primary goals are to prevent disease, reduce disease burden and enhance healthcare delivery system (MOH 9MP 2006). Interestingly, 9MP will concentrate on the consolidation of services to address inequity, quality, efficiency, misdistribution and optimal utilization of resources in order to achieve greater health (MOH 9MP 2006).

2.3 Health Seeking Behaviour

In yesteryears, the main reasons people seek health care services were for treatment of diseases and illnesses. Recently, the reasons for seeking the service have extended to rehabilitation, prevention of future health problems, and maintenance of good health. People will seek the service if there is perceived need to do so. An individual's interpretation of the need of care affects utilization and many factors determine the amount, types and timing of such use. The interpretation is very individualistic and what is perceived by the patient may be different from the perception of the health care providers.

The act to seek care is an independent decision and it is greatly influenced by a person's background, availability of services, affluence, education and financial situation. In a study by Adamson in USA, ethnicity, gender and socio-economic status were among the main causes that influence health seeking behaviour (Adamson 2003).

The health seeking models describe that behaviour has five levels of influences i.e. intrapersonal factors (i.e. the individual knowledge, attitudes, belief and personality traits), interpersonal factors (family and friends who define the social identity and role), organizational factors (rules, regulations

and policies that endorse or condone behaviours), community factors (norms or standard both formal and informal that exists among individuals, groups or organizations) and public policy factors (policies and regulations which support health practices) (NHMS II 1996). An individual's action is determined by his/her perceived susceptibility, perceived severity, perceived benefits and perceived barriers, given the necessary cues to action.

2.4 Health Care Utilization

Factors influencing health care utilization are the availability or supply of services, increase in the prevalence of chronic disease, new therapeutic techniques, ability to pay for services, cultural 'sick role' or encouraged stoicism, type of care preferred for specific symptoms and others. According to the Anderson's model these factors falls into 3 categories; predisposing (e.g. family composition, social structure or health beliefs), enabling (e.g. income) and need (e.g. factors which generate the purpose of utilization). Later Andersen and Newman added the organization and structure of the health care system as an influencing factor (Newbold et al. 1995). A study in the United Kingdom identified that the inequalities in utilization was due to income, ethnicity, employment status and education (Morris 2005). This is similar to the results reported in USA and Canada (Bernstein et al 2005; Newbold et al. 1995).

Over the decades, accessibility to health care has been the main issue being addressed by the government. The government has improved the accessibility to care by increasing and redistributing the medical manpower (including doctors and allied health professionals) and increasing the availability of certain financed services. Ambulance service, which is readily available in the urban area, is an important issue to address as there are arguments that there is a need to extend this service to the rural area.

Barriers have an impact on utilization as well. Among the important barriers that have been identified in previous studies are time (e.g. traveling time, waiting time, availability of time), physical distance, cultural distance, transportation and cost (Akin et al. 1986; NHMS I 1986-1987; NHMS II 1996).

Health utilization data is important to assess existing health status, document current needs and plan for resources. The data provide important information and highlight areas of disparity in access to care and quality of care. Trends in utilization would assist in addressing the quality of care, assessing areas which are lacking, projecting future health needs, forecasting future expenditure and planning for personnel training. Essentially, health utilization data serves as a decision support system for health policy development.

The changes in health care can help to reduce the disparity utilization and the knowledge on data gaps in the evolving health care delivery system. This is important because even in the best of economic conditions, there is disparity of utilization of health care. As we have just started the 9th Malaysia Plan, it is proper timing for such survey to be conducted as it allows assessment to be conducted to ensure effectiveness of the policies in ensuring the best and most effective delivery of health care services.

NHMS I was conducted in 1986 to evaluate the extent of disparity of health status and NHMS II was conducted to review the changes in health status to support policy making and program evaluation (NHMS I 1986-1987; NHMS II 1996). The availability of the results of previous NHMS studies allows comparisons to be made regarding the effectiveness of the policies and resource expenditures during

these periods. These comparisons will also provide some insight into the evolution of health care utilization over past decades.

3. OBJECTIVES

3.1 General Objectives

- 3.1.1 To determine the pattern of utilization of healthcare services (Public, Private, Traditional and Self medication)
- 3.1.2 To compare the health service utilization pattern in 2006 with that of 1996

3.2 Specific Objectives

- 3.2.1 To determine health seeking behaviour in relation to recent illness
- 3.2.2 To determine prevalence of hospitalization and ambulatory care usage
- 3.2.3 To determine utilization rate of ambulance services
- 3.2.4 To determine the pattern of and reasons for the use of public, private and traditional/ complementary health facilities as well as self-medication
- 3.2.5 To determine the average time, distance taken and mode of transport used to seek healthcare or treatment
- 3.2.6 To determine the pattern of and reasons for by-passing a certain level of health facility
- 3.2.7 To identify perceived barriers to seeking health care

4. METHODOLOGY

4.1 Scope of the Study

Research problems, scopes and main issues to be included in NHMS III were obtained from discussions and feedbacks from Ministry of Health state health managers, as well as experts from the local universities and individuals. The main research team members of the NHMS III reviewed and studied closely the feasibility and practicality of the suggested research topics for this community-based household survey. Extensive literature review was initiated. Technical and research

experts in the field related to the identified research areas were consulted for further advice and comments. The main research group used the following criteria in considering the suggested scopes for this survey;

- a) The issue / problem is current or has potential of high prevalence
- b) The issue / problem is focused on disease / disorders associated with affluence lifestyle, environment and demographic changes
- c) The issue / problem is causing physical, mental or social disability
- d) The issue / problem has important economic implications
- e) It is feasible to implement interventions to reduce the problem
- f) The information related to the issue/problem is not available through the routine monitoring system or other sources
- g) The information is more appropriately obtained through a nation-wide community survey
- h) It is feasible to obtain through a nation-wide community-based survey

The short-listed research topics were then presented to the Advisory Group Members for further deliberation and decisions. These topics were later refined by the research team members based on the decisions made at the Advisory Committee meeting. It was tabled to the Steering Committee and 18 research topics were approved to be included in the NHMS III.

4.2 Sampling Design and Sample Size

In calculating the sample size, stratification and sampling design, the Methodology Division Department of Statistics Malaysia as well as several other biostatistics consultants was roped in for advice.

4.2.1 Sampling frame

The sampling frame for this survey is an updated 2004 version; an effort undertaken prior to the implementation of Labour Force Survey (LFS) 2004. In general, each selected Enumeration Blocks (EB) comprised of 8 sampled Living Quarters (LQ). The EBs were geographically contiguous areas of land with identifiable boundaries. Each contains about 80-120 LQs with about 600 persons. Generally, all EBs are formed within gazetted boundaries.

The EBs in the sampling frame were also classified into urban and rural areas. The classification into these categories was in terms of population of gazetted and built-up areas as follows;

Stratum	Population of gazetted areas and built-up
Metropolitan	75,000 and above
Urban Large	10,000 to 74,999
Urban Small	1,000 to 9,999
Rural	The rest of the country

For sampling purposes, the above broad classification was found to be adequate for all states in Peninsular Malaysia and the Federal Territories of Kuala Lumpur and Labuan. However, for Sabah and Sarawak, due to problems of accessibility, the rural stratum had to be further sub-stratified based on the time taken to reach the area from the nearest urban centre.

For the purpose of urban and rural analysis, Metropolitan and Urban Large strata are combined together thus referred to as 'urban' stratum, while for Urban Small and the various sub-divisions of the rural areas they are combined together to form to a 'rural' stratum.

4.2.2 Sampling design

A two stage stratified sampling design with proportionate allocation was adopted in this survey. The first stage sampling unit was the EB and within each sampled EB, the LQs were selected as second stage unit. One LQ is estimated to comprise of 4.4 individuals. The whole household and persons within a selected LQ were studied.

4.2.3 Sample size

The sample size was determined based on 95% confidence interval and the following factors were taken into consideration;

a) Expected prevalence rate

The prevalence rate of the health problems for Malaysia obtained from the National Health and Morbidity Survey 2 (NHMS II) were used to estimate the overall sample size. Using the previous finding of 10% prevalence rate, the initial sample size at the state level was calculated in order to come up with overall sample size. The size was further apportioned for each state using the probability proportionate to size (PPS) method.

b) Response rate of the NHMS II

The response rates, which ranged from 83 to 97% for the NHMS II of each state, were taken into consideration in the course of the determination of sample size.

c) Margin of error and design effect

As the factors of precision and efficient of the survey are paramount, the decision reached for the targeted margin of error is 1.2 and the design effect valued at 2. These values were used at the initial stages of the calculation of the sample size of each state.

The survey findings addressing the specific objectives of this survey are expected to be used for state level programmed planning. Thus, the calculation for the sample size has taken into consideration data to be analyzed at the state level.

In addition to the major factors mentioned earlier, the availability of resources, namely, financial and human resources, and the time taken to conduct this survey also becomes part of the process of the determination of sample size.

4.3 Preparation of Field Areas and Logistic Support

A number of state liaison officers were recruited in preparation for the survey proper. Strong networking with state liaison officers and District Health Officers (MOH and local authorities) from the areas sampled for the survey was established. Field scouts were mobilized from these areas to identify and tag the LQ's selected for the survey, as well as to inform the community and related government agencies of the importance and schedule of the planned survey. State liaison officers were also assisting Field Supervisors in the arrangement of transportation, accommodation and other logistics for the survey teams.

4.4 Method of Data Collection

4.4.1 The questionnaire

A cross-sectional community household survey was conducted throughout Malaysia during from April 2006 to July 2006. A bi-lingual (Bahasa Malaysia and English) pre-coded questionnaire was design, pre-tested and piloted prior to the survey. All research topics for the questionnaire were arranged into modules ranging from A to Z. Certain topics that cover a similar area were arranged into sub-modules under a particular module. The health utilization questionnaires were from Module D2 of the NHMS III questionnaire. Questions comprise of both close ended and open ended. The questions in each module were tailored for the target age group.

Respondents were given a face to face interview (FI) questionnaires consisted of two subtypes, i.e., the household questionnaire that was answered by the head of the household of the LQ selected, and the individual questionnaire that was answered by each member of the household according to respondent's age [booklet for age group <2 years (pink), 2-<13 years (blue), 13-<18 years (yellow) and ≥ 18 years old (purple)]. For those below 13 years old, the child's mother or guardian was responsible for answering on his or her behalf. Those aged 13 years and above were required to answer their respective questionnaires directly through the interview.

All the FI questionnaires had a consent form to be read and signed by the respondent or parent / guardian of the respondent. The outside cover of all questionnaires had to be filled with a unique individual identification (ID) number by the enumerator. The enumerator also had to fill his or her ID as well as the code for the outcome of the interview as part of the quality assurance process.

4.4.2 The interview

As far as possible, all adult members who qualify from the selected LQ's were interviewed by the data collection team members. Parents or guardians were expected to provide information for their children aged 12 years and below (primary school). Interviews commenced early in the morning and lasted till late in the evening. Where an interview had been unsuccessful due to the absence of the respondent at the selected LQ, repeat visits were conducted after leaving messages with neighbours or by other means for an appointment at a later date. A household member can only be classified as a non-responded after 3 unsuccessful visits.

4.5 Field Preparations

Two main survey implementation groups were been formed: the Central Coordinating Team and the Field Teams. The Central Coordinating Team's main role was to monitor and coordinate the progress of implementation and provide administrative support in terms of financial and logistic arrangement for the field survey. The Field Teams were responsible to oversee and manage the field data collection process as well as undertake quality control checks.

The field data collection was conducted throughout Malaysia simultaneously, spanning a continuous period of 4 months starting from April 2006. Teams were organized to move into 5 regions in Peninsular Malaysia, 2 regions in Sabah and 4 regions in Sarawak for data collection.

4.5.1 Pilot study

A pilot was conducted on a sample of EB's (not included in the NHMS III) about two months prior to the actual nationwide survey. It was conducted in three different areas in and around the Klang Valley, namely Sepang, Klang and Bangsar. The population in these locations comprise of three distinct socio-demographic strata that are rural, semi-urban and urban. The pilot study was focus on the following aspects such as testing of the questionnaire, testing of field logistic preparation, testing of scouting activities and testing of central monitoring and logistics support.

4.5.2 Training of data collection teams

Training was held for two weeks for interviewers, team leaders, nurses and scouts to familiarize them with the questionnaire, develop their interpersonal communication skills and appreciate the need for teamwork. Mock interviews in the class room, and individual interviewing practice under supervision, both in simulated situations and in actual field settings were held.

4.6 Quality Control

Quality control process was carried out at two stages, field stage and central stage. Details description of quality control process has been described in NHMS III protocol.

4.7 Data Management

4.7.1 Data screening

The following data screening exercises were conducted at the field and central level prior to data entry;

- a) Field data screened by each interviewers at the end of his/her interview
- b) Field data screened for each question by peer interviewers through exchanging questionnaire booklets
- c) Field data screened by team leaders and field supervisors
- d) Central data screening of the questionnaire by the quality control team

4.7.2 Data entry

The data entry system was developed to record the information collected during the data collection phase. It is a web based system that allows multiple simultaneous accesses to the database. The NHMS III used a double manual data entry method and any discrepancy between both entries was verified by the supervisors. The data entry started simultaneously with data collection (first week of April 2006) and was completed at the end of January 2007. The data entered was stored in the database according to the module. The databases were designed using Structured Query Language (SQL) which is a standard language for relational database management system.

4.7.3 Data analysis

Data analysis was done by exporting the data into other analytical tools such as Microsoft Excel, SPSS and STATA. The data in database (text form) was exported to the Microsoft Excel form then to the SPSS and STATA. The raw data was cleaned and analysed according to the terms, working definition and dummy table prepared by the research groups. All the analytical process were monitored and advised by the NHMS III Statistics Consultant.

4.8 Definition of Terms / Variables

4.8.1 Health seeking behaviour

Refers to the pursuit of health care from a health facility, which may be either modern or traditional / complementary. In the context of illness, it pertains to all respondents who reported recent illness / injury in the 2-week recall period, and does not include self-medication.

4.8.2 Health care services utilization

Use of health services, which may be either for the respondent's recent illness / injury, or for reasons other than illness / injury.

4.8.3 Hospitalization

Admission to the hospital if the individual was ill and stay in the hospital not less than 24 hours or staying in a minimum of one night.

4.8.4 Self medication

Treating oneself without having seen or being advised by a doctor, or other health personnel, or a traditional / complementary practitioner.

4.8.5 Bypassing

Defined to have occurred when the distance of the health facilities visited by the respondent for their recent illness is further than the distance of the nearest facility (hospital or clinic) identified by the household.

4.8.6 Perceived barriers

Defined as 'reason for not seeking care'.

4.8.7 Ambulatory care

Health care provided to persons in physicians offices, hospital outpatient departments and hospital emergency departments without their admission to a health facility (NCHS).

4.8.8 Healthcare

Refers to the care received from a health facility which may be either receiving treatment, consultation or other modalities. In this report, the terminology of healthcare will refer to this definition.

5. FINDINGS

5.1 Respondents Profile

A total of 55,748 responded to this module giving a response rate of 98.3%. The sociodemographic characteristics are listed in Appendix : Table 1.

5.2 Health Seeking Behaviour for Recent Illness

The findings of health seeking behaviour were based on the recent illness for a period of two weeks prior to day of survey.

5.2.1 Prevalence (refer Appendix : Table 2)

Among those who reported recent illness or injury, 58.1% (CI: 57.1 - 59.1) sought healthcare.

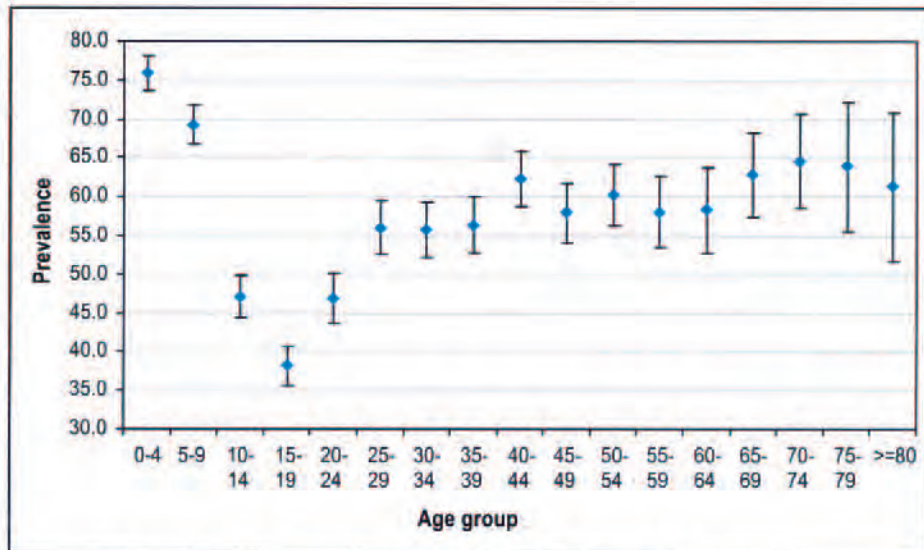


Figure 5.1: The prevalence of seeking health care by age group for recent illness / injury

Figure 5.1 shows that those below 10 years old had the highest prevalence of seeking health care i.e. 0 to 4 years old was 75.9% (CI: 73.7 - 78.2) and 5 to 9 years old was 69.2% (CI: 66.7 - 71.8). The lowest prevalence was among those aged 15 to 19 years old; 38.1% (CI: 35.6 - 40.7). This group was significantly different from the other age groups.

The prevalence of females seeking healthcare was higher compared to the males. However, the difference was not statistically significant (refer to Appendix : Table 2 by gender).

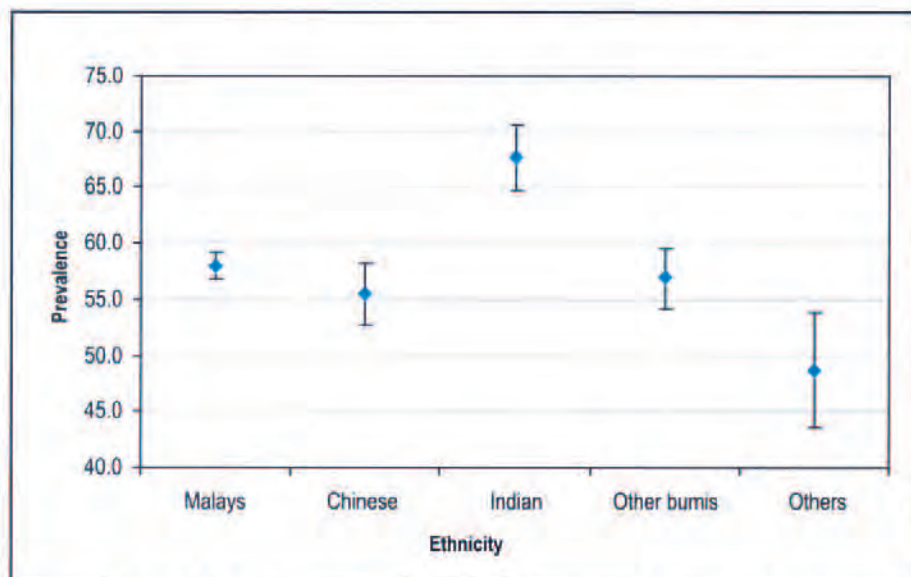


Figure 5.2: The prevalence of seeking healthcare by ethnicity for recent illness / injury

Figure 5.2 shows that the Indians had the highest prevalence of seeking healthcare, 67.7% (CI: 64.8 - 70.6) and it was significantly different then other ethnic groups.

When comparing education level, those with secondary education had the lowest prevalence of seeking healthcare, 51.2% (CI: 49.7 - 52.7). There was no difference among those living in urban, 58.8% (CI: 57.5 - 60.1) and rural area, 57.0% (CI: 55.5 - 58.5) in seeking healthcare.

The unmarried group had significantly lower prevalence, 42.9% (CI: 41.1 - 44.6) for seeking healthcare compared to the others. There was no significant difference among income groups for seeking healthcare.

By states, Perak, 63.8% (CI: 59.5 - 68.2) and Kedah 62.6% (CI: 59.9 - 65.4) reported to have the highest prevalence of seeking healthcare and was significantly higher than Sabah; 52.8% (CI: 50.1 - 55.5), Sarawak; 54.1% (CI: 50.6 - 57.6) and Malacca; 51.9% (CI: 45.8 - 57.9). Perlis showed a wide CI due to a small number of respondents. Peninsular Malaysia with 59.3% (CI: 58.3 - 60.4) had significantly higher prevalence of seeking healthcare compared to Sabah, Labuan and Sarawak (refer Figure 5.3).

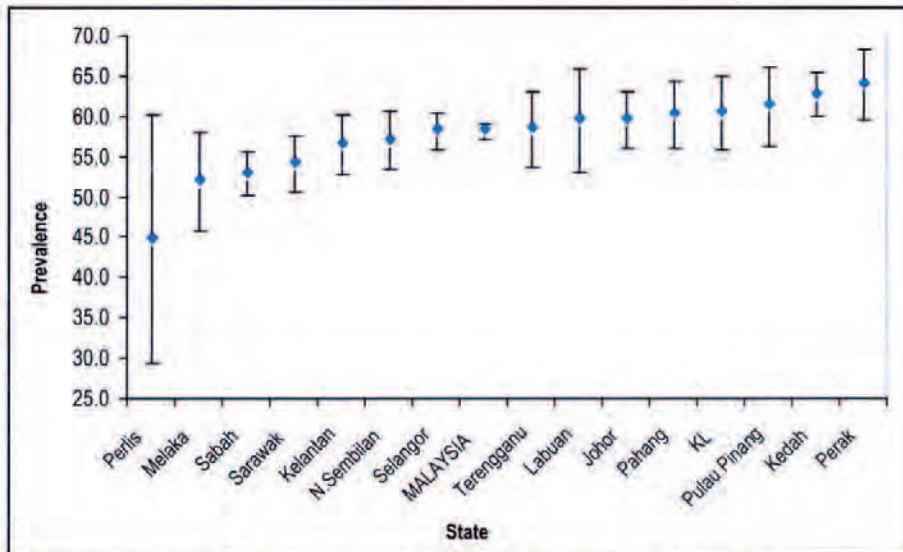


Figure 5.3: The prevalence of seeking health care by state for recent illness / injury

Among Malaysian, 58.4% (CI: 57.4 - 59.4) sought care compared to only 50.1% (CI: 45.2 - 55.0) among the non-Malaysian.

5.2.2 Pattern of utilization of facilities for recent illness / injury

Out of the 58.1% who sought healthcare, 18.3% (CI: 17.1 - 19.5) went to hospital facilities, 68.9% (CI: 67.4 - 70.4) attended ambulatory facilities outside the hospitals, 0.9% (CI: 0.7 - 1.2) used T/CM care facilities and 11.9% (CI: 10.9 - 12.0) used other type of facilities.

5.2.3 Type of services

Among those who sought care and treatment for recent illness, 85.3% (CI: 84.3 - 86.3) used ambulatory care services and 14.7% (CI: 13.7 - 15.7) used non ambulatory services such as in-patient hospital care, in-patient nursing care, in-patient rehabilitation care, self care, traditional and complementary care and others.

5.2.4 Time lag to seek healthcare for recent illness (refer Appendix : Table 3)

Among those who seek health care, majority seek health care within 24hrs, 72.9% (CI: 71.6 - 74.2) while 26.0% (CI: 24.7 - 27.3) seek healthcare after 24 hours from the onset of illness but not exceeding 5 days. Only 1.2% seek healthcare after 5 days from the onset of illness.

5.2.5 Distance travelled to seek healthcare (refer Appendix : Table 4)

The mean reported distance travelled to seek healthcare was 5.7 km (CI: 5.4 – 6.0) and the median was 3.0 km. The survey showed that 47.7 % (CI: 45.6 - 49.7) of the respondent reported the distance travelled to seek healthcare was within 3 km, 25.5% (CI: 23.8 - 27.1) from 3 to 5 km and 26.9% (CI: 25.2 - 28.6) more than 5 km.

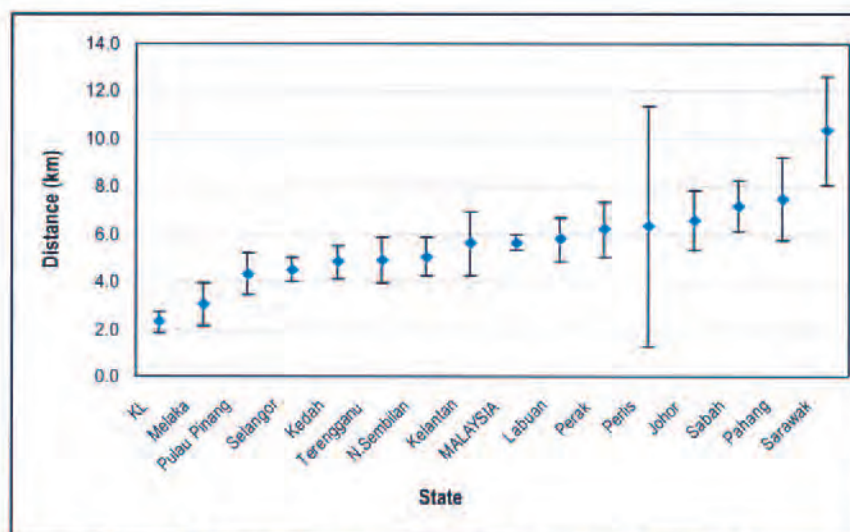


Figure 5.4: The distance travelled to seek healthcare by state for recent illness / injury

In Peninsular Malaysia, the mean distance travelled to seek healthcare was 5.1 km (CI: 4.8 - 5.4) and was significantly shorter than those from Sabah including Labuan, 6.9 km (CI: 6.1 - 7.8) and Sarawak, 10.4 km (CI: 8.2 - 12.7).

The median distance for Peninsular Malaysia was 2.5 km, Sabah including Labuan, 5.0 km and for Sarawak, 6.0 km.

Within strata, the mean distance for urban was 4.3 km (CI: 4.0 - 4.6) and for rural, it was 7.6 km (CI: 7.0 - 8.2) and it was statistically significant.

5.2.6 Mode of transport used to seek healthcare

Majority of the people, 83.5% (CI: 82.0 – 85.0) used own transport to seek health care. About 8.5% (CI: 7.3 - 9.7) used public transport, while 5.6% (CI: 4.7 - 6.4) walked to the facility, 0.4% (CI: 0.2 - 0.5) used ambulance service and 2.1% (CI: 1.7 - 2.6) used other mode of transport.

In Sabah, 35.4% (CI: 29.8 - 41.1) of those who seek healthcare used public transport. This was significantly different from Sarawak; 12.4% (CI: 7.9 – 17.0) and Peninsular Malaysia, 4.1% (CI: 3.4 - 4.8).

In Peninsular Malaysia, the use of own transport was reported as 88.1% (86.8 - 89.5) while for Sabah including Labuan it was 61.5% (CI: 56.2 - 66.7) and Sarawak, 76.3% (CI: 69.7 - 82.8).

5.2.7 Time taken to seek healthcare (refer Appendix : Table 5)

About 58% (CI: 56.1 - 59.9) of those seeking healthcare took less than 15 minutes to travel, 27.4% (CI: 25.9 - 28.9) took 15 to less than 30 minutes, 14.5% (CI: 13.2 - 15.8) took 30 to 120 minutes and only 0.1% (CI: < 0.1 - 0.2) took more than 120 minutes to seek healthcare.

The overall mean time taken to seek healthcare was 14.4 minutes (CI: 13.9 - 14.9). For Peninsular Malaysia, the mean travelling time was 13.2 minutes (CI: 12.8 - 13.7) Sabah including Labuan was 18.1 minutes (CI: 16.3 - 19.9), and Sarawak was 20.9 minutes (CI: 18.1 - 23.7).

In Peninsular Malaysia, the median time taken to seek healthcare was 10.0 minutes while for Sabah including Labuan and Sarawak, it was 15.0 minutes.

5.2.8 Bypassing the nearest static health facility

The prevalence of bypassing was 13.5% (CI: 12.4 - 14.7). Sabah including Labuan had the highest prevalence of bypassing with a prevalence of 14.8% (CI: 11.8 - 17.7) but it was not significantly different from Peninsular Malaysia and Sarawak.

Within strata, those from the rural area showed a higher prevalence of bypassing, 15.2% (CI: 13.4 - 16.9) compared to only 12.4% (CI: 11.0 - 13.9) in urban area.

There was no significant difference between sex eventhough males showed a higher prevalence for bypassing, 14.2% (CI: 12.6 - 15.7) compared to females, 13.0% (CI: 11.6 - 14.4).

Among the ethnic groups, Chinese had the highest prevalence of bypassing 17.4% (CI: 13.9 - 20.9) but it was not significantly different from other races.

a) Reasons for bypassing

Table 5.1 shows the most frequent reason for bypassing the nearest static health facility, regardless of public or private, was due to perceive poor quality of care, followed by inaccessibility (eg: no transport, high cost of treatment).

Table 5.1: Reason for bypassing

Reasons not seeking care	n	%
Perceived poor quality of care	615	59.8
Inaccessibility	353	34.3
Others	31	3.0
Availability of time to seek treatment	30	2.9
Total	1,029	100.0

* This findings need to be interpreted with caution.
Please refer to "Limitation of Survey"

5.2.9 Facility of choice

Respondent with recent illness were asked about their preferred facility to visit to seek care. About 30.3% prefers to go to Government Clinic 30.3% followed by private clinic 27.4%, government general hospital 17.8%, government district hospital 16.4%, private hospital 3.3% and medicine hall/Chinese medicine shop/pharmacy 1.6%.

Their preference was then compared to the facilities that they actually visited. It was shown that only 52.4% of them were able to go to their preferred facilities.

5.2.10 Reasons for not seeking care for recent illness / injury (refer Appendix : Table 10)

Table 5.2 shows that perceived mild illness 66.2% (CI: 64.6 - 67.9), followed by ability to self medicate 24.7% (CI: 23.2 - 26.3) and perceived no necessity to seek care 4.4% (CI: 3.7 - 5.1) were the reasons for not seeking care.

Table 5.2: Reasons for not seeking care

Reasons not seeking care	n	%	95% CI	
			Lower	Upper
Perceived mild illness	3,515	66.2	64.6	67.9
Ability to self-medicate	1,306	24.7	23.2	26.3
Perceived no necessity to seek care	228	4.4	3.7	5.1
Accessibility	133	2.4	1.9	2.8
Perceived poor quality of care	51	0.9	0.7	1.2
Psychological barrier	42	0.8	0.6	1.0
Availability of time to seek treatment	15	0.3	0.1	0.4
Others	16	0.3	0.2	0.5

5.3 Utilization of Health Services

5.3.1 Hospitalization

a) Prevalence

The prevalence of hospitalization in the past one year prior to the day of survey was 5.0% (CI: 4.8 - 5.2) and the mean frequency of hospitalization was 1.4 times (CI: 1.3 - 1.4).

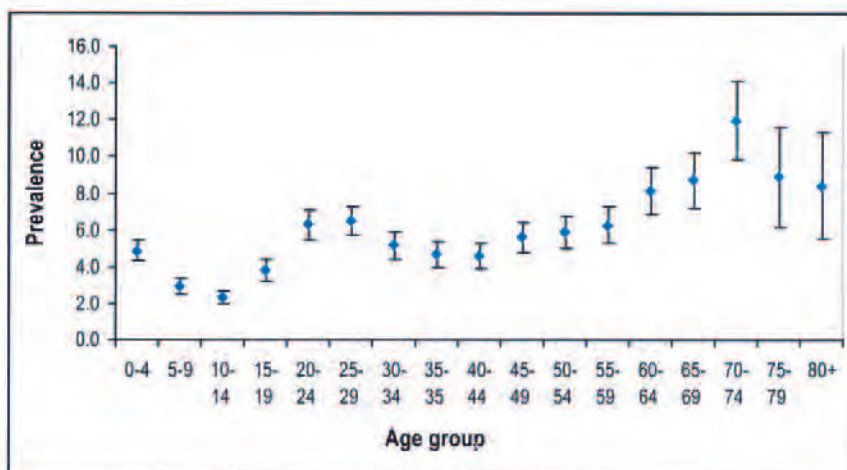


Figure 5.5: Prevalence of hospitalization by age group

Figure 5.5 shows that the highest prevalence of hospitalization was among those 60 years old and above while the lowest prevalence was among the school going age group from 5-19 years old.

Females have a higher prevalence at 5.3% (CI: 5.0 - 5.5) compared to the males, 4.7% (CI: 4.5 - 5.0) but the difference was not significantly.

Among the ethnic groups, the Indians had the highest prevalence of hospitalization at 7.1% (CI: 6.4 - 7.9) and were significantly different from the other races.

Those who were not married, 3.8% (CI: 3.5 - 4.2) had the lowest prevalence of being hospitalized and were significantly different from the rest of the marital groups. The widow/ widower group, 7.5% (CI: 6.2 - 8.7) had higher prevalence of hospitalization compared to the married and divorcee but was not statistically significant.

Those without education, 6.4 (CI: 5.6 - 7.2) had a higher prevalence of hospitalization and were significantly different from those with primary education, 4.4% (CI: 4.1 - 4.7) but was not significantly different with those of secondary and tertiary education.

The unemployed group had the highest prevalence of hospitalization, but was not significantly different amongst the income bracket.

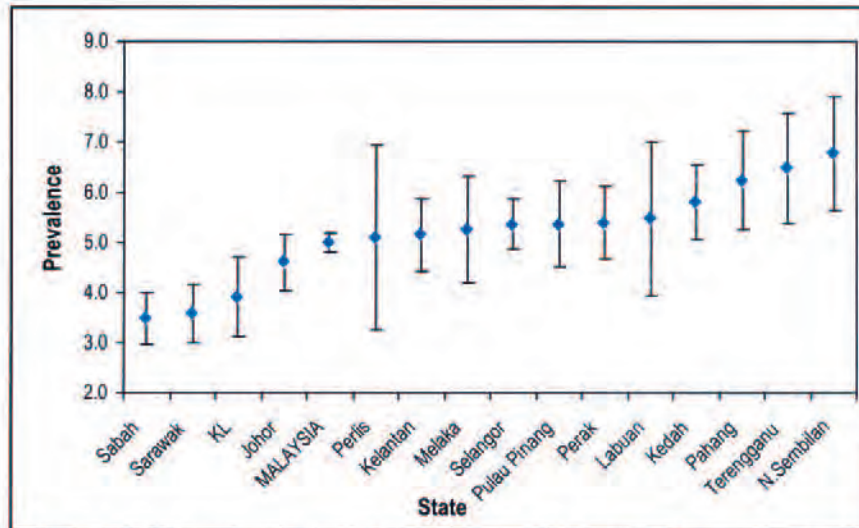


Figure 5.6: Prevalence of seeking care at hospital for recent illness by state

Figure 5.6 shows that the prevalence of hospitalization was lower in Sabah 3.5% (CI: 3.0 - 4.0) and Sarawak 3.6% (CI: 3.0 - 4.2) which was significantly lower than most states in Peninsular Malaysia.

b) Place of hospitalization

The most common place of hospitalization was the government hospital. Government hospital accounted for 82.6% (CI: 80.9 - 84.3), private hospital 16.9% (CI: 15.2 - 18.6) while the combination of both government and private was only 0.5% (CI: 0.2 - 0.8) of the hospitalization.

The prevalence of hospitalization in private hospital was higher among the productive age and early age groups.

There was no significant difference within gender with regards to place of hospitalization.

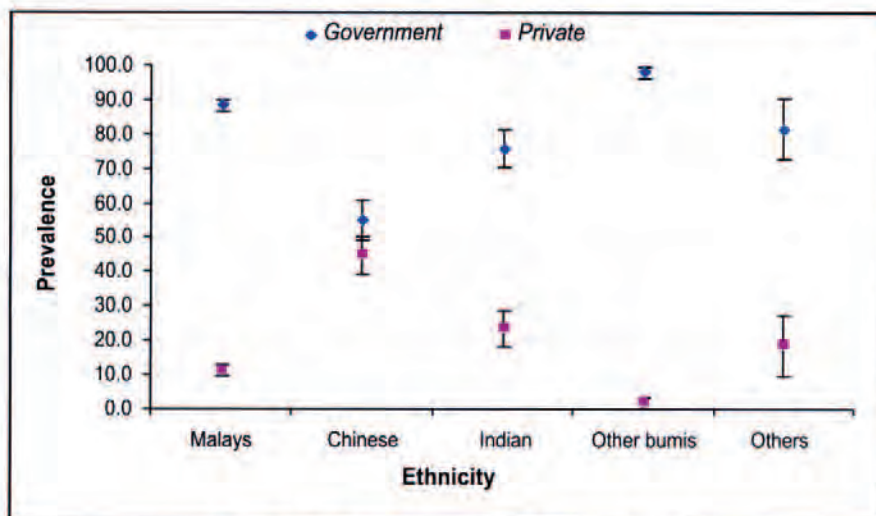


Figure 5.7: Place of hospitalization by ethnicity

Figure 5.7 shows that there was a higher prevalence among Chinese 44.8% (CI: 39.1 - 50.4) admitted to the private hospital compared to the other ethnic groups.

The highest prevalence being of hospitalized to government hospital were among the other Bumiputeras at 96.9% (CI: 96.1 - 99.6) and the Malay at 88.3% (CI: 86.5 - 90.2).

Among the non-Malaysian, more were hospitalized in public hospital, 78.9% (CI: 69.4 - 88.5) compared to private hospital, 21.1% (CI: 11.5 - 30.6).

There was no significant difference for status of marriage with regards to place of hospitalization.

The tertiary education group had a higher prevalence of admission to private hospital at 36.2% (CI: 28.1 - 44.2) while those without education had the lowest proportion at 9.0% (CI: 5.3 - 12.8).

Figure 5.8 shows that the higher the income, the higher the prevalence of being hospitalized in a private hospital.

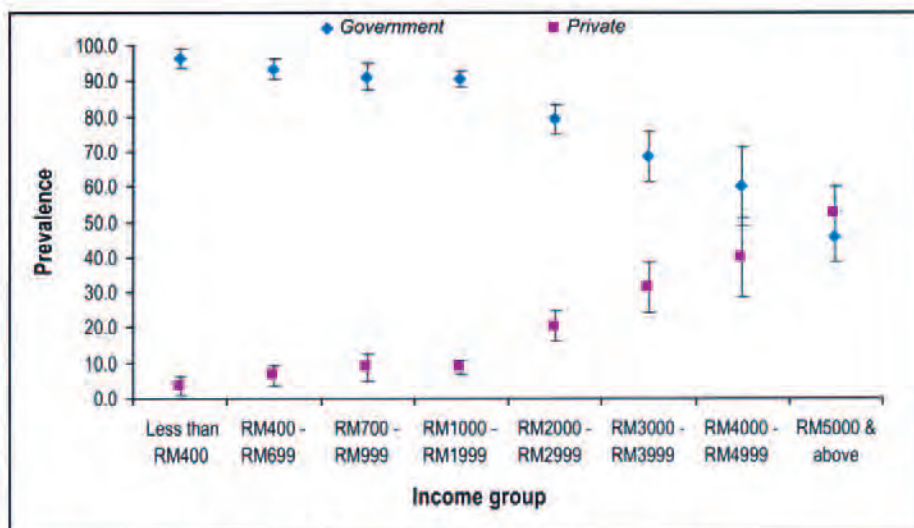


Figure 5.8: Place of hospitalization by income

Hospitalization to private hospital was higher among the urban population, 22.6% (CI: 20.1 - 25.1), than to the rural population with 6.6% (CI: 4.8 - 8.4). Penang, 42.5% (CI: 32.7 - 52.4), Federal Territory of Kuala Lumpur 38.7% (CI: 29.7 - 47.8), and Selangor 27.2% (CI: 22.4 - 32.1) reported the higher prevalence of hospitalization to the private facilities.

c) Type of care during hospitalization

The type of care received during hospitalization was in-patient curative care, 75.6% (CI: 73.5 - 77.6), in-patient rehabilitation care, 19.2% (CI: 17.5 - 21.2), long term nursing care, 4.9% (CI: 4.0 - 5.8) and 0.3% (CI: 0.1 - 0.5) for any combination of the above care.

5.3.2 Ambulatory care service

The prevalence of ambulatory services utilization among those reported seeking care for recent illness was 85.3% (CI: 84.3 - 86.3). The highest prevalence of ambulatory care usage was among youngest age group 0 to 4 years old as shown in Figure 5.9.

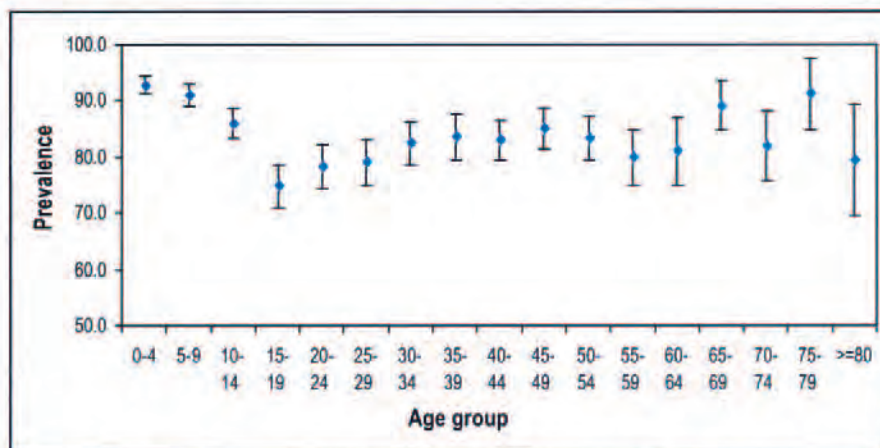


Figure 5.9: Prevalence of ambulatory service usage by age group

Ambulatory service usage was significantly different between sex with a higher prevalence among females, 87.4% (CI: 86.2 - 88.6) and it was significantly lower among the males, 83.0% (CI: 81.5 - 84.4).

Indians, 91.7% (CI: 89.7 - 93.9), had the highest prevalence of ambulatory care usage and it was significantly different compared to the Malays, Chinese and others.

Those who were not married 76.4% (CI: 74.0 - 78.7) had the lowest prevalence using ambulatory care and it was significantly different from the married and widower. The divorced group with a percentage of 85.5% (CI: 78.5 - 92.5) had the highest prevalence of ambulatory care usage but it was not statistically significant.

The secondary level education had the lowest prevalence of ambulatory care usage, 80.1% (CI: 78.3 - 81.9) and it was significantly different from those without education, 85.2% (CI: 82.2 - 88.3) and primary level education, 85.1% (CI: 83.5- 86.6). The ambulatory care usage did not show any difference between the income brackets.

Sabah including Labuan, 86.6% (CI: 84.3 - 88.8) had the highest prevalence of ambulatory service usage but it was not significantly different from Peninsular Malaysia and Sarawak.

The Federal Territory of Kuala Lumpur, 92.6% (CI: 89.5 - 95.8) had the highest prevalence of ambulatory service usage, followed by Negeri Sembilan, 91.3% (CI: 87.3 - 95.2) and was significantly different from some states as depicted in Figure 5.10. Kedah with a percentage of 75.3 (CI: 71.8 - 78.7) had the lowest prevalence.

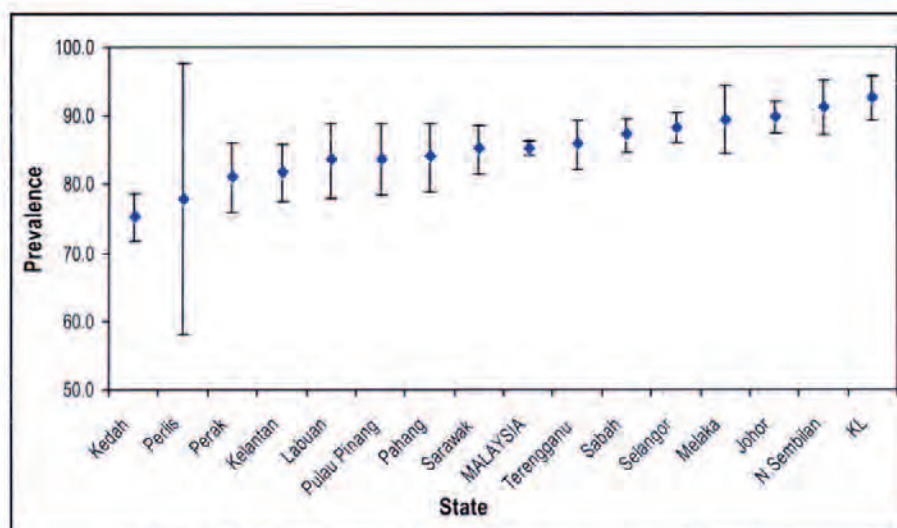


Figure 5.10: Prevalence of ambulatory service usage by state

a) Type of facilities

Among those who used ambulatory service, 62.1% (CI: 60.2 – 64.0) went to the private clinics while 37.9% (CI: 36.0 - 39.8) used the government clinics.

Sarawak, 33.0% (CI: 26.6 - 39.5) had the lowest percentage of utilising private clinic which was significantly different compared to the other states.

A higher prevalence of the urban population seeking care used private clinics, 73.6% (CI: 71.4 - 75.7) compared to rural 43.7% (CI: 40.6 - 46.8) and was significantly different.

Males, 63.3% (CI: 61.0 - 65.7) used more private clinics compared to females 61.0% (CI: 58.7 - 63.3), but not significantly different.

More Chinese, 80.6% (CI: 77.0 - 84.2) used private clinics and followed by others, 71.3% (CI: 63.2 - 79.5). Bumiputeras were the lowest, 42.9% (CI: 36.6 - 49.2) and were significantly different within the other ethnic groups.

Non Malaysian used more private clinics, 80.9% (CI: 74.3 - 87.4) compared to Malaysian, 61.6% (CI: 59.7 - 63.5) and were significantly different.

The survey revealed that the higher the income bracket, the higher the prevalence of going to a private ambulatory facility (Figure 5.11).

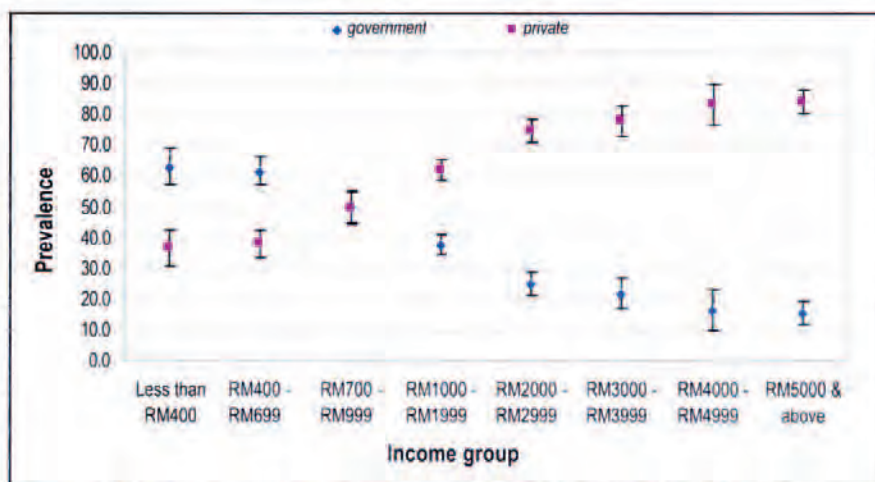


Figure 5.11: Prevalence of seeking care at ambulatory facilities by income group

5.3.3 Self care

The prevalence of self care was low, 0.7% (CI: 0.5 - 0.9) and not statistically significant, between rural area at 0.7% (CI: 0.4 - 1.0) and urban at 0.7% (CI: 0.4 - 0.9).

The highest prevalence was in Terengganu, 1.4% (CI: < 0.1 - 2.7), followed by Federal Territory of Kuala Lumpur with 1.3% (CI: 0.1 - 2.5), however it was not statistically significant.

Female had a slightly higher prevalence of self care compared to males, 0.7% (CI: 0.4 - 1.0), 0.7% (CI: 0.4 - 1.0), respectively.

Chinese, 0.9% (CI: 0.3 - 1.5) had the highest prevalence of self care followed by the Malays, 0.8% (CI: 0.6 - 1.1) and the Indians, 0.3% (CI: -0.1 - 0.7) had the lowest prevalence, however not significantly different.

Those with secondary level of education, 0.9% (CI: 0.5 - 1.3) had the highest prevalence of self care but not significantly different from other levels of education.

5.3.4 Traditional and complementary medicine (T/CM) care

The overall prevalence of T/CM care was 0.9% (CI: 0.7 - 1.2).

The highest prevalence of T/CM care usage was in Melaka, 1.5% (CI: -0.5 - 3.6), followed by Kedah with 1.5% (CI: 0.5 - 2.4) but it was not significantly different from others.

Rural population had a higher prevalence of using T/CM care, 1.1% (CI: 0.7 - 1.5) compared to urban population, 0.8% (CI: 0.5 - 1.1) but it was not significantly different.

Males had a higher prevalence of using T/CM care, 1.1% (CI: 0.8 - 1.5) compared to females, 0.7% (CI: 0.4 - 1.0) but it was not significantly different.

Chinese, 1.2% (CI: 0.4 - 2.0) had a higher prevalence of using T/CM care followed by Malays, 1.0% (CI: 0.7 - 1.3) while, the Indians, 0.4% (CI: -0.1 - 0.9) had the lowest prevalence but there was no statistically difference among the ethnic groups.

Secondary level of education, 0.9% (CI: 0.5 - 1.3) had the highest prevalence of self care and was not significantly different from other levels of education.

5.3.5 Ambulance service (refer Appendix : Table 11)

In the last 12 months, 2.5% (CI: 2.3 - 2.8) of the population reported that they have ever used the ambulance service or other equivalent vehicle for emergency situation. The prevalence of ambulance use in the urban area was 2.0% (CI: 1.2 - 2.2) and in rural area it was 2.9% (CI: 2.6 - 3.2). Among those who used the ambulance service 90.8% reported using MOH's ambulance, 4.1% used ambulance provided by private sector and 1.2% used Red Crescent's ambulance service.

Table 5.3: Distribution of ambulance service user by provider (n=797)

	Ambulance provider							Total
	MOH	Red Crescent Service	St John's	JPA3	Private	Others	Combination of at least 2 providers	
Proportion (%)	90.8	1.2	0.7	0.7	4.1	1.4	1.1	100.0

Figure 5.12 shows that the prevalence of ambulance utilization was relatively higher in the peninsular states than in Sabah or Sarawak.

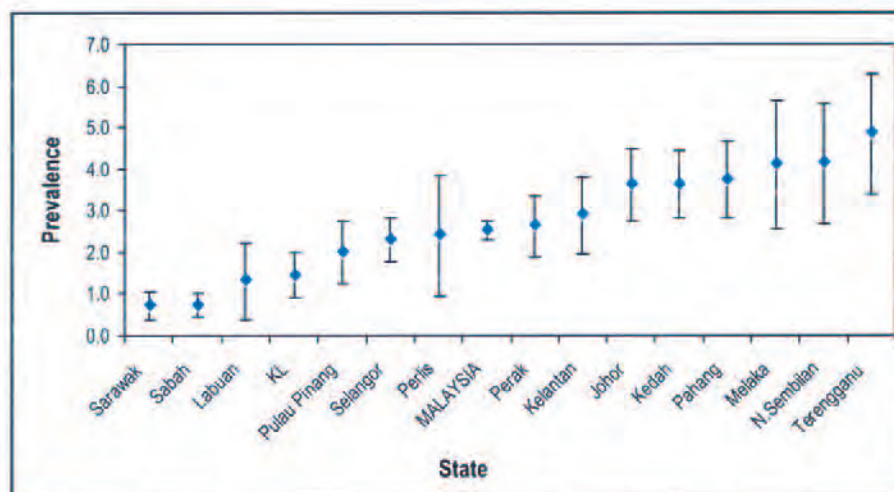


Figure 5.12 : Prevalence of ambulance utilization by state

About 11.4% of those who have used the ambulance service encountered problems. Half of those problems (53.5%) reported were late arrival of ambulance. 12.9% reported unfriendly service, 10.9% faced difficulty to contact the service, 7.9% complained of poor ambulance service coverage and 4.0% was due to no telephone facilities.

6. DISCUSSION

6.1 Health Seeking Behaviour for Recent Illness

Health seeking behaviour of an individual or community clearly varies when faced with different illnesses. The range of social class and personal variables identified as influencing utilization include race, income, social class, education, age, gender, social mobility and the less easily identifiable socio-psychological variables such as past experience. Health seeking behaviour was derived from the information obtained by asking for a history of having illness and a history of type of healthcare sought for the illness within a 2-week recall period. The pattern of utilization of health services in Malaysia is well demonstrated by NHMS I, NHMS II and NHMS III.

NHMS I showed that, in Peninsular Malaysia, $70.8 \pm 1.4\%$ of those with illness within the previous 2 weeks had sought health care (NHMS I 1986-1987). NHMS II showed that it was 43.5 %, while in NHMS III the prevalence recorded was 58.1%. This could be due to better access to health care as the number of health facilities has increased over the years (Table 6.1).

Table 6.1: Number of health facilities in Malaysia

Year	Hospitals		Medical clinics	
	Government	Private	Government	Private
1996	111	203	774	N/A
2001	115	224	855	N/A
2006	128	223	807	

Source: Ministry of Health, Malaysia, *Health Facts 1996, 2001, 2006*

Another factor contributing could be the improved literacy rate among the population. The literacy rate has improved as shown in the following table.

Table 6.2: Percentage of population literate (aged 10 years and above), Malaysia 1980-2004

Year	1980	1991	1996	2000	2004
Literacy rate (%)	72.0	85.0	93.0	93.8	95.1

Source: Ministry of Health, Malaysia, *Health Indicators 2005*

In terms of age, the extreme age groups i.e. below 5 years and age > 65 years were still the most common group who sought health care for recent illnesses, similar to results the reported in both previous NHMS.

The Indians had the highest prevalence of seeking healthcare, 67.7% (CI: 64.8 - 70.6) and was significantly different among the ethnic groups. This finding is similar to the NHMS II. Further analysis is needed to establish the association between ethnicity and other socio-economics such as income and education in relation to the health seeking behaviour.

Majority of the population sought treatment early within 24 hours. However, in Sabah and Sarawak, 1.6% and 1.4% respectively sought care after more than 5 days, which was higher than the rate in Peninsular Malaysia, 1.1%. Many factors could have contributed to this disparity which was not elicited in this study.

6.1.1 Distance travelled and travel time taken to seek health care and treatment

The travel time is the time taken for the respondents to travel from their houses to the healthcare facility. NHMS I reported that in Peninsular Malaysia, the average travel time was 30 minutes.

In NHMS II, 33.5% of the responses reported a travel time of less than 15 minutes, 36.9% between 15 to 30 minutes and the rest reported more than 30 minutes. Based on Table 6.5, there are increasingly more respondents taking less than 30 minutes.

Majority of the respondents' travel time in NHMS III is within 30 minutes. This could possibly be due to improvement in infrastructure and transportation even though more respondents reported further distance travelled to seek care. It was also noted in NHMS III, 83.6% of respondents used their own transport.

Table 6.3: Comparison of distance travelled to seek health care and treatment between NHMS I and NHMS III (Peninsular Malaysia and Malaysia)

	0-3 km	4 – 5 km	>5km
NHMS I (Peninsular Malaysia)	69.0 %	17.0 %	14.0 %
NHMS III (Peninsular Malaysia)	61.8 %	15.6 %	22.7 %
NHMS II (Malaysia)	NA	NA	NA
NHMS III (Malaysia)	57.6 %	15.5 %	26.9 %

Table 6.4: Comparison of travel time taken to seek health care and treatment between NHMS I, NHMS II and NHMS III

	<15 min	15 -<30 min	30-120 min	>120 min
NHMS I	34.0 %	20.0 %	46.0 %	
NHMS II	33.5 %	36.9 %	26.6 %	3.0 %
NHMS III	58.0 %	27.4 %	14.5 %	0.1 %

6.1.2 Reasons for not seeking care

The reasons for not seeking care were regrouped into the categories below to facilitate comparison between the 3 surveys.

Table 6.5: Comparison of reasons for not seeking health care between NHMS I, NHMS II and NHMS III

NHMS	Perceived mild illness	Perceived Ability to self medicate	Availability of time to seek treatment	Perceived no necessity to seek care	Accessibility	Others	Perceived poor quality of care
I	0	0	24.2	0	23.5	27.8	24.5
II	76.6	6.1	5.2	2.3	3.6	6.2	0
III	66.2	24.7	0.3	4.4	2.4	1.1	0.9

Table 6.5 shows that the perceived poor quality of healthcare had been replaced by perceived mild illness and perceived ability to self medicate as a reason for not seeking care. Inaccessibility and time constraint are no longer barrier to seek cover.

6.1.3 By passing nearest static facility and Reasons for by-passing

In NHMS III, the prevalence of bypassing was very much lower (13.5%) compared to NHMS II (56.8%). This could be due to difference in methodology and source of information.

6.2 Utilization of Health Services

6.2.1 Hospitalization

NHMS II reported that the prevalence of hospitalization in the past one year was 7.2% (CI: 7.0 -7.5) while the NHMS III reported 5.0% (CI: 4.8 - 5.2). The figure was not comparable to NHMS I (2.8%) which reported the prevalence of hospitalization in the past two weeks only.

6.2.2 Hospital admission

NHMS I reported that 84.9% and NHMS II reported 78.4% hospitalization to the government hospital (Ministry of Health). In NHMS III, 82.6% were admitted to government hospital. High cost factor in private facilities could be the main reason for the high utilization of government facilities for hospitalization.

Table 6.6: Distribution of hospital admission by sector

Private hospital	Government hospital
16.9% (CI: 15.2 : 18.6)	82.6% (CI: 80.9 - 84.3) NHMS I 84.9% NHMS II 78.4%

6.2.3 Ambulance service

The NHMS III found the overall prevalence of ambulances use for emergency situation was relatively low, (2.5%).

In the US, it was estimated that of the 114 million visits to US emergency departments (EDs) in 2003, 16 million arrived by ambulance (14%) (McCaig & Stussman 2005). This cost the nation almost \$10 billion annually (Herritage 2004). In Taiwan the emergency ambulance services were unable to meet 86% of the community needs as a mode to reach the emergency department (Huang et al. 2001). Such comparisons need to be viewed in depth. If the Malaysian patterns of ambulance utilization were to evolve or progress following trends of developed nations, strategic plans must be made so as to ensure future needs can be met.

This survey found a higher prevalence of ambulance utilization is in the rural area compared to urban. This contrasted differently when compared to other developed countries such as Taiwan (Chen et al. 1996) where the urban prevalence was higher. This may be possibly explained by the fact that there is a dependency of these communities on such services to access care. In order to see whether the local patterns of utilization can be compared with trends of developed or developing countries, further in-depth studies are required. This may have bearing on strategic deployment of ambulances considering the fact that a majority of the MOH ambulances are located in urban location and within premises of hospitals. However, establishing relationship between ambulance utilization and geographical factors, ethnicity or racial differences requires similar further exploration.

The survey also found that MOH was the main agency assessed for ambulance in the country as compared with other agencies or organizations. This may also be attributed by the fact that MOH also have the largest ambulance fleet in the country.

The survey revealed that the major problems encountered by the respondents in the context of ambulance utilization were timeliness of care delivered (53.5%), in accessibility (22.8%) and unfriendly service (12.9%).

6.3 Limitations

6.3.1 In NMHS III, the distance of household to the nearest health facilities was based on what was reported by respondent whilst in NHMS II it was based on actual measured distance. Therefore interpretation on by passing of facilities should be made with caution.

7. CONCLUSION

Pattern of utilization of the health care facility is the same as in the previous 2 survey except the gap between private and public is closer. The time taken was shorter even though the distance was longer, and majority used own transport. The overall ambulance usage was low. However, the usage was high among rural population which explained the high utilization of public ambulance.

The utilization is influence by socio demographic factors and geographical determinants.

Quality and accessibility were not the main barrier to seek care but perceptual of having mild illness and the ability to self medicate were the main reason.

Bypassing phenomenon is still prevalent and perceived poor quality and inaccessibility was still the most important reasons.

8. RECOMMENDATIONS

8.1 Service Improvement

Although the quality of care is not the main barrier in seeking care but it was still the main reason for bypassing. Therefore there is still a need to improve the quality of service. Infrastructure and location were not the main concern but accessibility with regard to operation hours, manpower availability, service and drugs were the main concerns.

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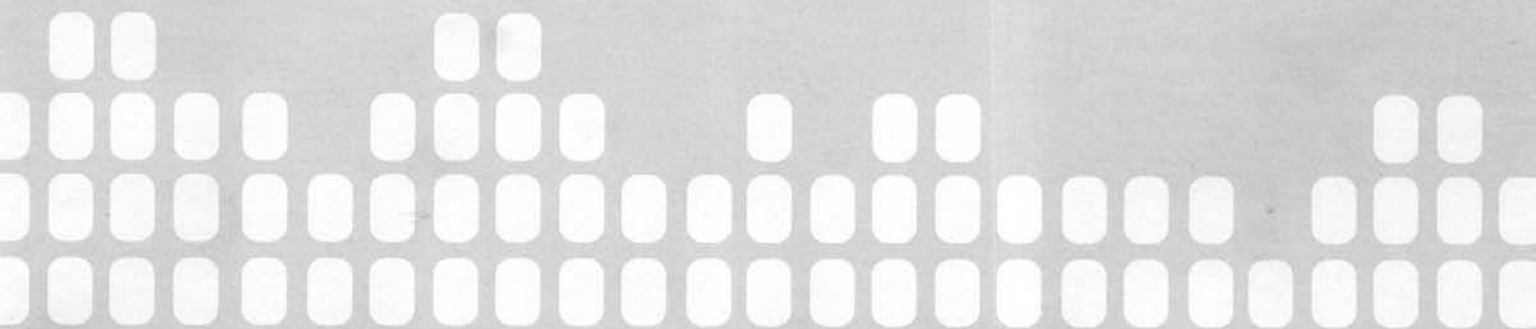
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APPENDIX



APPENDIX

Table 1: Socio-demographic characteristics of the respondents

Socio-demographic	n	%
MALAYSIA	55,824	100.0
Sex		
Male	26,286	47.1
Female	29,538	52.9
Strata		
Urban	32,257	57.8
Rural	23,567	42.2
Ethnicity		
Malays	32,009	57.3
Chinese	10,079	18.1
Indian	4,351	7.8
Other bumis	6,970	12.5
Others	2,415	4.3
Education Level		
None	3,910	8.3
Primary	20,690	43.8
Secondary	19,312	40.9
Tertiary	3,350	7.1
Marital Status		
Not married	12,329	31.5
Married	24,228	61.9
Divorcee	738	1.9
Widow/Widower	1,850	4.7
Age		
0-4	5,917	10.6
5-9	6,641	11.9
10-14	6,221	11.1
15-19	4,697	8.4
20-24	3,823	6.9
25-29	3,688	6.6
30-34	3,548	6.4
35-39	3,600	6.5
40-44	3,832	6.9
45-49	3,494	6.3
50-54	3,039	5.4
55-59	2,474	4.4
60-64	1,648	3.0
65-69	1,417	2.5
70-74	892	1.6
75-79	485	0.9
Above 80	379	0.7

Table 1: Socio-demographic characteristics of the respondents (continue)

Socio-demographic	n	%
State		
Johor	6,187	11.1
Kedah	4,204	7.5
Kelantan	3,758	6.7
Melaka	1,379	2.5
N.Sembilan	2,041	3.7
Pahang	2,928	5.2
Pulau Pinang	2,961	5.3
Perak	4,110	7.4
Perlis	515	0.9
Selangor	9,374	16.8
Terengganu	2,526	4.5
Sabah	7,169	12.8
Sarawak	4,822	8.6
KL	2,942	5.3
Labuan	908	1.6
Peninsular Malaysia	42,925	76.9
Citizenship		
Malaysian	53,030	95.1
Non-Malaysian	2,761	4.9
Occupation		
Senior Official & Manager	641	1.9
Professionals	2,253	6.8
Technical & Associate	2,645	8.0
Clerical Workers	1,838	5.5
Service Workers & Shop	5,653	17.1
Skilled Agricultural & Fishery	2,674	8.1
Craft & Related Trade Workers	2,017	6.1
Plant & Machine Operator & Assembler	1,875	5.7
Elementary Occupations	1,618	4.9
Housewife	8,040	24.3
Unemployed	3,879	11.7
Household Income		
Less than RM400	4,624	8.6
RM400 - RM699	8,457	15.7
RM700 - RM999	6,460	12.0
RM1000 - RM1999	15,029	28.0
RM2000 - RM2999	8,418	15.7
RM3000 - RM3999	4,226	7.9
RM4000 - RM4999	2,022	3.8
RM5000 & above	4,512	8.4

Table 2: Prevalence of seeking care for recent illness

Seeking care	n	Estimated population	%	95% CI	
				Lower	Upper
MALAYSIA	7,670	2,825,335	58.1	57.1	59.1
Sex					
Male	3,649	1,342,235	56.9	55.5	58.2
Female	4,021	1,483,099	59.3	58.0	60.6
Strata					
Urban	4,270	1,724,465	58.8	57.5	60.1
Rural	3,400	1,100,869	57.0	55.5	58.5
Ethnicity					
Malays	4,675	1,723,376	58.0	56.7	59.2
Chinese	929	365,747	55.4	52.6	58.2
Indian	788	314,156	67.7	64.8	70.6
Other bumis	1,052	346,160	56.9	54.1	59.6
Others	226	75,896	48.7	43.5	53.8
Education level					
None	516	178,714	58.4	55.1	61.6
Primary	2,556	938,095	55.7	54.2	57.3
Secondary	2,265	845,209	51.2	49.7	52.7
Tertiary	401	156,397	57.3	53.6	60.9
Marital status					
Not married	1,458	539,684	42.9	41.1	44.6
Married	2,857	1,054,461	58.2	56.7	59.7
Divorcee	102	37,749	63.9	56.4	71.5
Widow/Widower	287	103,619	62.1	57.8	66.4
Age					
0-4	1,433	524,072	75.9	73.7	78.2
5-9	1,104	406,793	69.2	66.7	71.8
10-14	691	253,925	47.1	44.4	49.7
15-19	538	198,295	38.1	35.6	40.7
20-24	450	167,212	46.9	43.7	50.1
25-29	460	172,743	56.0	52.5	59.6
30-34	405	149,460	55.8	52.2	59.3
35-39	389	144,276	56.4	52.7	60.1
40-44	471	174,922	62.3	58.7	65.8
45-49	380	141,674	57.9	54.1	61.8
50-54	377	139,036	60.3	56.4	64.1
55-59	260	96,550	58.1	53.4	62.7
60-64	197	71,410	58.3	52.9	63.8
65-69	208	74,572	62.8	57.4	68.2
70-74	157	56,394	64.6	58.5	70.6
75-79	78	28,130	63.9	55.6	72.2
Above 80	66	23,625	61.3	51.7	70.8

Table 2: Prevalence of seeking care for recent illness (continue)

Seeking care	n	Estimated population	%	95% CI	
				Lower	Upper
State					
Perak	487	200,195	63.8	59.5	68.1
Kedah	913	329,057	62.7	59.9	65.4
Pulau Pinang	319	112,375	61.2	56.2	66.2
KL	316	124,374	60.3	55.7	64.9
Pahang	388	148,775	60.2	56.0	64.3
Johor	696	268,151	59.6	56.1	63.0
Labuan	203	63,298	59.5	53.0	65.9
Terengganu	371	126,409	58.4	53.6	63.1
Selangor	1,252	517,438	58.1	55.8	60.5
N.Sembilan	414	151,084	57.0	53.3	60.6
Kelantan	558	184,635	56.4	52.7	60.1
Sarawak	593	226,171	54.1	50.6	57.6
Sabah	982	301,668	52.8	50.1	55.5
Melaka	161	65,169	51.9	45.8	57.9
Perlis	17	6,536	44.7	29.4	60.1
Peninsular Malaysia	5,892	2,234,197	59.3	58.2	60.4
Citizenship					
Malaysian	7,434	2,744,278	58.4	57.4	59.4
Non-Malaysian	231	79,338	50.1	45.2	55.0
Occupation					
Senior Official & Manager	75	30,126	62.5	54.1	71.0
Professionals	273	104,990	62.0	57.6	66.3
Technical & Associate	333	126,483	57.9	53.8	62.0
Clerical Workers	262	99,254	63.4	58.5	68.2
Service Workers & Shop	634	235,834	52.3	49.4	55.1
Skilled Agricultural & Fishery Craft & Related Trade Workers	336	114,021	53.1	48.9	57.4
Plant & Machine Operator & Assembler	251	95,285	59.6	54.9	64.3
Elementary Occupations	223	82,379	51.9	46.9	57.0
Housewife	183	64,387	52.8	47.6	58.1
Unemployed	902	333,510	57.2	54.6	59.7
Household income	511	182,737	52.4	49.2	55.6
Household income					
Less than RM400	665	230,949	54.3	51.2	57.4
RM400 - RM699	1,150	396,964	55.6	53.1	58.0
RM700 - RM999	884	318,521	55.9	53.3	58.6
RM1000 - RM1999	2,072	764,220	59.7	58.0	61.4
RM2000 - RM2999	1,195	453,433	60.1	57.8	62.5
RM3000 - RM3999	604	232,990	62.3	58.5	66.0
RM4000 - RM4999	277	107,421	58.4	53.5	63.2
RM5000 & above	599	236,836	58.8	55.3	62.4

Table 3: Time lag of seeking care for recent illness

Time lag	Time lag 24 hours or less				
	n	Estimated population	%	95% CI	
				Lower	Upper
MALAYSIA	5,528	2,038,695	72.9	71.6	74.2
Sex					
Male	2,675	983,432	74.0	72.2	75.7
Female	2,853	1,055,262	71.9	70.3	73.5
Strata					
Urban	3,070	1,241,519	72.6	70.9	74.4
Rural	2,458	797,176	73.3	71.3	75.3
Ethnicity					
Malays	3,412	1,258,282	73.8	72.2	75.4
Chinese	663	261,129	72.4	69.1	75.7
Indian	584	232,618	74.5	70.5	78.5
Other bumis	703	231,111	67.2	63.5	71.0
Others	166	55,555	74.5	68.3	80.7
Education level					
None	357	123,887	71.8	67.7	75.9
Primary	1,823	669,728	72.1	70.1	74.1
Secondary	1,602	599,644	71.5	69.5	73.6
Tertiary	289	113,662	73.3	68.7	78.0
Marital status					
Not married	1,024	379,731	71.0	68.5	73.5
Married	2,003	742,885	71.2	69.4	73.1
Divorcee	69	25,256	66.9	57.7	76.1
Widow/Widower	206	73,957	74.0	68.7	79.2
Age					
0-4	1,089	397,415	75.9	73.4	78.5
5-9	826	303,691	75.7	72.9	78.5
10-14	496	182,727	72.6	68.9	76.2
15-19	358	131,597	67.0	62.8	71.1
20-24	325	121,879	73.7	69.4	78.0
25-29	339	127,429	74.7	70.4	78.9
30-34	286	105,877	71.3	66.7	76.0
35-39	285	106,486	74.3	69.9	78.8
40-44	341	127,432	73.7	69.6	77.8
45-49	260	97,518	69.2	64.5	73.9
50-54	256	94,550	68.6	63.7	73.5
55-59	175	64,909	68.2	62.4	74.0
60-64	137	49,375	69.9	63.0	76.8
65-69	146	52,397	72.1	65.8	78.4
70-74	99	35,989	66.7	59.1	74.4
75-79	53	18,959	70.3	59.9	80.7
Above 80	51	18,220	78.6	68.0	89.1

Table 3: Time lag of seeking care for recent illness (continue)

Time lag	Time lag 24 hours or less				
	n	Estimated population	%	95% CI Lower	Upper
Household income					
Less than RM400	460	159,251	69.9	65.6	74.1
RM400 - RM699	792	272,475	69.5	66.2	72.8
RM700 - RM999	626	224,917	71.8	68.1	75.4
RM1000 - RM1999	1,501	554,239	73.0	70.8	75.1
RM2000 - RM2999	874	331,891	73.7	70.9	76.6
RM3000 - RM3999	454	174,985	75.9	71.8	80.0
RM4000 - RM4999	211	82,034	77.4	71.8	83.1
RM5000 & above	458	181,145	76.9	72.9	80.8
Citizenship					
Malaysian	5,350	1,977,095	72.7	71.4	74.1
Non-Malaysian	174	60,204	77.4	72.1	82.8
State					
Johor	452	173,655	66.5	62.0	71.0
Kedah	682	245,462	74.8	70.6	78.9
Kelantan	417	138,153	75.5	71.1	79.9
Melaka	107	44,032	67.6	60.3	74.8
N.Sembilan	313	113,767	76.0	71.2	80.7
Pahang	291	111,724	75.3	69.8	80.7
Pulau Pinang	258	90,740	81.5	76.8	86.3
Perak	386	157,706	78.8	73.5	84.1
Perlis	15	5,859	89.7	76.3	103.0
Selangor	946	390,864	76.4	73.4	79.4
Terengganu	265	90,042	71.6	66.1	77.0
Sabah	647	198,584	66.9	63.0	70.8
Sarawak	379	144,934	65.2	60.7	69.8
KL	217	85,409	68.7	61.8	75.6
Labuan	153	47,762	76.2	70.1	82.4
Peninsular Malaysia	4,349	1,647,414	74.4	72.9	75.8
Occupation					
Senior Official & Manager	53	21,361	71.7	61.2	82.3
Professionals	198	76,871	74.0	68.5	79.4
Technical & Associate	244	92,586	73.4	68.5	78.3
Clerical Workers	184	70,001	70.5	65.0	76.0
Service Workers & Shop	461	171,997	73.5	70.0	77.0
Skilled Agricultural & Fishery	233	79,086	70.0	64.5	75.4
Craft & Related Trade Workers	173	65,835	69.7	64.0	75.4
Plant & Machine Operator & Assembler	163	60,401	74.3	68.6	80.0
Elementary Occupations	131	46,199	72.4	65.9	79.0
Housewife	596	221,825	67.6	64.3	70.9
Unemployed	368	131,836	74.3	70.3	78.3

Table 3: Time lag of seeking care for recent illness (continue)

Time lag	Time lag between 24 hours to 5 days				
	n	Estimated population	%	95% CI	
				Lower	Upper
MALAYSIA	1,974	726,219	26.0	24.7	27.3
Sex					
Male	901	332,275	25.0	23.3	26.7
Female	1,073	393,943	26.8	25.2	28.5
Strata					
Urban	1,115	449,080	26.3	24.6	28.0
Rural	859	277,139	25.5	23.5	27.5
Ethnicity					
Malays	1,161	428,346	25.1	23.5	26.7
Chinese	236	93,321	25.9	22.6	29.1
Indian	191	76,570	24.5	20.6	28.5
Other bumis	330	108,933	31.7	28.0	35.4
Others	56	19,048	25.5	19.3	31.7
Education level					
None	128	44,221	25.6	21.7	29.6
Primary	681	250,116	26.9	24.9	28.9
Secondary	610	226,084	27.0	24.9	29.0
Tertiary	97	37,091	23.9	19.5	28.4
Marital status					
Not married	408	150,802	28.2	25.8	30.7
Married	757	276,475	26.5	24.7	28.3
Divorcee	33	12,493	33.1	23.9	42.3
Widow/Widower	67	24,723	24.7	19.6	29.9
Age					
0-4	338	124,575	23.8	21.3	26.3
5-9	261	96,537	24.1	21.3	26.8
10-14	185	67,679	26.9	23.3	30.5
15-19	170	63,108	32.1	28.0	36.3
20-24	115	41,825	25.3	21.0	29.5
25-29	112	42,123	24.7	20.5	28.9
30-34	111	40,729	27.4	22.9	32.0
35-39	94	34,159	23.9	19.5	28.2
40-44	114	41,684	24.1	20.1	28.1
45-49	112	41,306	29.3	24.7	33.9
50-54	107	39,530	28.7	23.9	33.4
55-59	72	26,822	28.2	22.6	33.8
60-64	51	18,799	26.6	19.9	33.3
65-69	51	18,403	25.3	19.3	31.4
70-74	46	16,268	30.2	22.7	37.6
75-79	21	7,700	28.6	18.3	38.8
Above 80	14	4,972	21.4	10.9	32.0

Table 3: Time lag of seeking care for recent illness (continue)

Time lag	Time lag between 24 hours to 5 days				
	n	Estimated population	%	95% CI Lower	Upper
Household income					
Less than RM400	189	65,949	28.9	24.7	33.2
RM400 - RM699	331	115,048	29.4	26.1	32.6
RM700 - RM999	233	84,838	27.1	23.4	30.7
RM1000 - RM1999	526	194,006	25.5	23.4	27.7
RM2000 - RM2999	303	114,648	25.5	22.6	28.3
RM3000 - RM3999	141	54,521	23.6	19.6	27.7
RM4000 - RM4999	60	23,288	22.0	16.3	27.7
RM5000 & above	129	51,088	21.7	17.8	25.6
Citizenship					
Malaysian	1,924	709,285	26.1	24.8	27.4
Non-Malaysian	49	16,610	21.4	16.0	26.7
State					
Johor	225	86,910	33.3	28.8	37.7
Kedah	218	78,916	24.0	20.0	28.1
Kelantan	130	42,874	23.4	19.1	27.8
Melaka	51	20,113	30.9	23.7	38.1
N.Sembilan	87	32,368	21.6	16.9	26.4
Pahang	84	31,949	21.5	16.2	26.8
Pulau Pinang	55	19,483	17.5	12.8	22.2
Perak	100	42,024	21.0	15.7	26.3
Perlis	2	677	10.4	-3.0	23.7
Selangor	282	117,025	22.9	20.0	25.8
Terengganu	98	33,701	26.8	21.3	32.3
Sabah	304	93,561	31.5	27.7	35.3
Sarawak	195	74,135	33.4	28.8	37.9
KL	97	38,178	30.7	23.9	37.5
Labuan	46	14,306	22.8	17.2	28.5
Peninsular Malaysia	1,429	544,217	24.6	23.1	26.0
Occupation					
Senior Official & Manager	18	7,079	23.8	13.8	33.8
Professionals	66	25,050	24.1	18.8	29.4
Technical & Associate	81	31,087	24.7	19.9	29.4
Clerical Workers	76	28,526	28.7	23.3	34.2
Service Workers & Shop	159	58,875	25.2	21.7	28.6
Skilled Agricultural & Fishery	93	31,553	27.9	22.6	33.3
Craft & Related Trade Workers	72	27,012	28.6	22.9	34.4
Plant & Machine Operator & Assembler	53	19,455	23.9	18.4	29.5
Elementary Occupations	47	16,414	25.7	19.3	32.2
Housewife	268	98,080	29.9	26.7	33.1
Unemployed	122	43,601	24.6	20.7	28.5

Table 3: Time lag of seeking care for recent illness (continue)

Time lag	Time lag more than 5 days				
	n	Estimated population	%	95% CI	
				Lower	Upper
MALAYSIA	90	32,486	1.2	0.9	1.4
Sex					
Male	39	14,123	1.1	0.7	1.4
Female	51	18,363	1.3	0.9	1.6
Strata					
Urban	47	18,645	1.1	0.8	1.4
Rural	43	13,841	1.3	0.9	1.7
Ethnicity					
Malays	53	19,492	1.1	0.8	1.5
Chinese	17	6,172	1.7	0.9	2.5
Indian	8	2,958	0.9	0.3	1.6
Other bumis	12	3,864	1.1	0.4	1.9
Others	0	0	-	-	-
Education level					
None	13	4,385	2.5	1.1	4.0
Primary	27	9,524	1.0	0.6	1.4
Secondary	34	12,504	1.5	1.0	2.0
Tertiary	11	4,224	2.7	1.1	4.4
Marital status					
Not married	12	4,301	0.8	0.4	1.3
Married	65	23,672	2.3	1.7	2.8
Divorcee	0	0	-	-	-
Widow/Widower	4	1,327	1.3	<0.1	2.6
Age					
0-4	4	1,527	0.3	-0.1	0.7
5-9	3	969	0.2	-0.2	0.7
10-14	4	1,471	0.6	0.0	1.2
15-19	5	1,855	0.9	0.1	1.8
20-24	5	1,749	1.1	0.1	2.0
25-29	3	1,050	0.6	-0.1	1.3
30-34	5	1,811	1.2	0.2	2.3
35-39	7	2,606	1.8	0.5	3.2
40-44	10	3,783	2.2	0.8	3.5
45-49	6	2,093	1.5	0.3	2.7
50-54	11	3,811	2.8	1.1	4.4
55-59	9	3,420	3.6	1.3	5.9
60-64	7	2,511	3.6	1.0	6.2
65-69	5	1,857	2.6	0.3	4.8
70-74	5	1,665	3.1	0.4	5.8
75-79	1	306	1.1	-1.1	3.4
Above 80	0	0	-	-	-

Table 3: Time lag of seeking care for recent illness (continue)

Time lag	Time lag more than 5 days				
	n	Estimated population	%	95% CI	
				Lower	Upper
Household income					
Less than RM400	8	2,767	1.2	0.3	2.1
RM400 - RM699	12	4,436	1.1	0.5	1.8
RM700 - RM999	10	3,576	1.1	0.4	1.9
RM1000 - RM1999	32	11,424	1.5	0.9	2.1
RM2000 - RM2999	10	3,598	0.8	0.3	1.3
RM3000 - RM3999	3	1,131	0.5	-0.1	1.1
RM4000 - RM4999	2	645	0.6	-0.2	1.5
RM5000 & above	9	3,476	1.5	0.5	2.4
Citizenship					
Malaysian	87	31,547	1.2	0.9	1.4
Non-Malaysian	3	939	1.2	-0.5	2.9
State					
Johor	2	649	0.3	-0.1	0.6
Kedah	11	4,009	1.2	0.5	1.9
Kelantan	6	1,936	1.1	0.2	1.9
Melaka	3	1,024	1.6	-0.3	3.5
N.Sembilan	10	3,620	2.4	1.0	3.8
Pahang	12	4,748	3.2	1.4	5.0
Pulau Pinang	3	1,109	1.0	-0.1	2.1
Perak	1	465	0.2	-0.2	0.7
Perlis	0	0	-	-	-
Selangor	9	3,761	0.7	0.3	1.2
Terengganu	6	2,054	1.6	0.2	3.1
Sabah	15	4,661	1.6	0.6	2.5
Sarawak	8	3,078	1.4	0.4	2.4
KL	2	787	0.6	-0.2	1.5
Labuan	2	585	0.9	-0.3	2.1
Peninsular Malaysia	65	24,162	1.1	0.8	1.4
Occupation					
Senior Official & Manager	3	1,338	4.5	-0.5	9.5
Professionals	6	2,022	2.0	0.4	3.5
Technical & Associate	7	2,462	2.0	0.5	3.4
Clerical Workers	2	762	0.8	-0.3	1.8
Service Workers & Shop	9	3,191	1.4	0.5	2.3
Skilled Agricultural & Fishery	7	2,413	2.1	0.6	3.7
Craft & Related Trade Workers	4	1,586	1.7	0.1	3.3
Plant & Machine Operator & Assembler	4	1,451	1.8	<0.1	3.5
Elementary Occupations	3	1,160	1.8	-0.2	3.9
Housewife	23	8,329	2.5	1.5	3.6
Unemployed	6	1,940	1.1	0.1	2.1

Table 4: Distance travelled to seek treatment for recent illness

Distance	n	Estimated population	95% CI			Median
			Mean	Lower	Upper	
MALAYSIA	5,196	1,885,120	5.7	5.3	6.0	3.0
Sex						
Male	2,504	907,878	5.9	5.5	6.4	3.0
Female	2,692	977,242	5.4	5.0	5.7	3.0
Strata						
Urban	2,824	1,120,645	4.3	4.0	4.6	2.0
Rural	2,372	764,474	7.6	7.0	8.2	4.0
Ethnicity						
Malays	3,169	1,152,198	5.4	5.0	5.8	3.0
Chinese	605	233,966	5.4	4.6	6.2	2.0
Indian	561	220,234	4.7	4.1	5.4	2.0
Other bumis	714	229,649	8.2	6.9	9.4	5.0
Others	147	49,072	5.7	4.2	7.2	3.0
Education level						
None	372	127,451	6.7	5.7	7.6	3.0
Primary	1,653	597,599	5.9	5.4	6.3	3.0
Secondary	1,568	576,869	5.8	5.2	6.3	3.0
Tertiary	281	107,582	4.1	3.4	4.9	2.0
Marital status						
Not married	982	359,641	5.3	4.7	6.0	3.0
Married	1,982	720,717	6.3	5.8	6.7	3.0
Divorcee	64	23,011	8.4	3.9	13.0	4.5
Widow/Widower	194	69,042	6.6	5.3	7.8	3.0
Age						
0-4	985	353,634	5.5	4.9	6.1	3.0
5-9	699	253,116	4.5	4.0	5.1	2.0
10-14	453	163,934	4.5	4.0	5.1	3.0
15-19	366	133,607	5.5	4.0	7.0	2.0
20-24	304	111,075	5.9	5.0	6.8	3.0
25-29	318	118,804	5.3	4.4	6.2	2.2
30-34	264	95,605	5.6	4.6	6.6	2.0
35-39	265	97,049	5.5	4.5	6.6	3.0
40-44	329	119,475	5.6	4.5	6.7	3.0
45-49	260	94,954	5.7	4.8	6.6	3.0
50-54	275	100,469	7.3	5.7	8.8	3.0
55-59	172	63,733	7.6	5.8	9.4	4.0
60-64	146	51,898	8.0	6.2	9.7	4.0
65-69	145	51,628	5.9	4.7	7.1	3.0
70-74	101	35,713	7.8	4.7	10.9	4.8
75-79	62	21,920	8.6	6.2	11.1	5.0
Above 80	46	16,261	6.7	3.9	9.4	3.5

Table 4: Distance travelled to seek treatment for recent illness (continue)

Distance	n	Estimated population	Mean	95% CI		Median
				Lower	Upper	
State						
Johor	298	111,202	6.6	5.3	7.8	4.0
Kedah	726	262,088	4.8	4.1	5.5	2.0
Kelantan	490	162,025	5.6	4.3	7.0	3.0
Melaka	109	41,190	3.1	2.2	4.0	2.0
N.Sembilan	354	130,083	5.1	4.3	5.9	3.0
Pahang	306	117,677	7.5	5.7	9.2	3.0
Pulau Pinang	241	84,912	4.3	3.5	5.2	2.0
Perak	224	92,281	6.2	5.0	7.4	3.0
Perlis	8	2,804	6.3	1.3	11.4	4.5
Selangor	743	306,819	4.5	4.0	5.0	2.3
Terengganu	268	90,668	4.9	4.0	5.9	3.0
Sabah	728	224,286	7.2	6.1	8.2	4.0
Sarawak	303	115,347	10.4	8.1	12.6	6.0
KL	239	94,068	2.3	1.9	2.8	1.0
Labuan	159	49,669	5.8	4.9	6.7	5.0
Peninsular Malaysia	4,006	1,495,817	5.1	4.8	5.4	2.0
Citizenship						
Malaysian	5,051	1,835,006	5.6	5.3	6.0	3.0
Non-Malaysian	143	49,413	5.9	4.2	7.6	3.0
Occupation						
Senior Official & Manager	48	18,897	4.3	2.5	6.2	2.0
Professionals	193	72,456	5.2	3.9	6.5	3.0
Technical & Associate	222	83,125	5.9	4.5	7.4	2.3
Clerical Workers	178	66,105	4.4	3.6	5.1	3.0
Service Workers & Shop	456	167,545	4.5	4.0	5.0	2.0
Skilled Agricultural & Fishery	233	78,183	9.5	8.0	11.1	5.0
Craft & Related Trade Workers	163	61,231	5.6	4.2	7.0	3.0
Plant & Machine Operator & Assembler	155	56,246	7.8	5.7	9.9	3.0
Elementary Occupations	117	41,294	8.2	6.2	10.2	4.0
Housewife	602	218,977	5.8	5.1	6.6	3.0
Unemployed	377	134,741	7.7	6.5	8.9	4.0
Household income						
Less than RM400	464	158,628	6.7	5.7	7.8	3.0
RM400 - RM699	782	266,709	7.0	6.0	8.0	3.0
RM700 - RM999	582	207,084	5.7	4.8	6.7	3.0
RM1000 - RM1999	1,462	532,197	5.7	5.1	6.2	3.0
RM2000 - RM2999	799	298,117	5.2	4.5	5.8	3.0
RM3000 - RM3999	376	142,222	5.0	4.0	6.0	2.5
RM4000 - RM4999	187	71,283	5.5	4.2	6.8	3.0
RM5000 & above	392	152,168	4.0	3.5	4.6	2.0

Table 5: Traveling times taken to seek treatment for recent illness

Traveling times	n	Estimated population	Mean	95% CI		Median
				Lower	Upper	
MALAYSIA	5,268	1,908,922	14.4	13.9	14.9	10.0
Sex						
Male	2,532	916,777	14.1	13.5	14.7	10.0
Female	2,736	992,144	14.6	14.0	15.2	10.0
Strata						
Urban	2,849	1,129,698	13.3	12.7	13.9	10.0
Rural	2,419	779,224	15.9	15.1	16.8	10.0
Ethnicity						
Malays	3,221	1,169,228	13.4	12.9	14.0	10.0
Chinese	611	235,856	13.9	12.7	15.0	10.0
Indian	564	221,638	14.3	13.2	15.3	10.0
Other bumis	722	232,272	19.3	17.3	21.4	15.0
Others	150	49,928	16.1	13.9	18.3	15.0
Education level						
None	370	126,654	17.6	15.6	19.6	15.0
Primary	1,701	613,575	15.0	14.3	15.7	10.0
Secondary	1,581	581,066	13.9	13.3	14.6	10.0
Tertiary	276	105,322	11.7	10.6	12.9	10.0
Marital status						
Not married	1,004	366,515	13.7	12.9	14.5	10.0
Married	1,994	724,017	15.1	14.4	15.8	10.0
Divorcee	63	22,576	19.7	15.9	23.4	15.0
Widow/Widower	200	71,177	16.4	14.6	18.1	15.0
Age						
0-4	1,000	359,211	13.8	12.9	14.7	10.0
5-9	715	258,837	13.1	12.2	14.0	10.0
10-14	468	168,741	13.8	12.7	14.9	10.0
15-19	379	137,652	13.1	12.1	14.1	10.0
20-24	309	113,075	14.3	13.1	15.6	10.0
25-29	319	119,220	12.7	11.5	13.8	10.0
30-34	263	94,964	13.9	12.3	15.4	10.0
35-39	269	98,341	15.4	13.7	17.1	10.0
40-44	324	117,484	15.1	13.2	17.0	10.0
45-49	259	94,747	15.1	13.6	16.7	10.0
50-54	279	101,711	16.0	14.2	17.7	10.0
55-59	174	64,396	15.9	13.9	17.9	15.0
60-64	144	50,875	19.6	16.5	22.7	15.0
65-69	150	53,292	15.2	13.3	17.0	15.0
70-74	102	36,030	15.6	13.2	18.0	10.0
75-79	60	21,182	16.8	13.2	20.3	11.0
Above 80	48	16,919	18.0	13.5	22.4	15.0

Table 5: Traveling times taken to seek treatment for recent illness (continue)

Traveling times	n	Estimated population	Mean	95% CI		Median
				Lower	Upper	
State						
Johor	305	113,676	15.2	13.4	17.0	10.0
Kedah	740	267,494	12.6	11.6	13.5	10.0
Kelantan	500	165,280	12.6	11.4	13.9	10.0
Melaka	110	41,682	10.9	9.6	12.3	10.0
N.Sembilan	356	130,807	13.3	11.6	14.9	10.0
Pahang	312	119,729	14.1	12.3	15.8	10.0
Pulau Pinang	239	84,173	11.4	10.3	12.5	10.0
Perak	222	91,351	16.6	14.5	18.6	15.0
Perlis	7	2,466	15.1	7.7	22.5	15.0
Selangor	756	311,595	13.7	12.7	14.8	10.0
Terengganu	279	94,325	10.9	9.7	12.1	10.0
Sabah	739	227,625	19.1	17.0	21.3	15.0
Sarawak	299	113,661	20.8	18.0	23.7	15.0
KL	232	91,313	12.0	10.8	13.2	10.0
Labuan	172	53,745	13.7	11.7	15.7	10.0
Peninsular Malaysia	4,058	1,513,891	13.2	12.8	13.6	10.0
Citizenship						
Malaysian	5,119	1,857,624	14.2	13.8	14.7	10.0
Non-Malaysian	147	50,598	18.7	14.8	22.7	15.0
Occupation						
Senior Official & Manager	45	17,596	11.4	8.9	13.8	10.0
Professionals	189	70,935	12.3	10.6	13.9	10.0
Technical & Associate	232	86,624	13.1	11.4	14.9	10.0
Clerical Workers	179	66,359	13.5	11.9	15.1	10.0
Service Workers & Shop	461	169,240	13.5	12.5	14.5	10.0
Skilled Agricultural & Fishery	239	80,181	18.5	16.7	20.3	15.0
Craft & Related Trade Workers	163	61,302	13.7	12.0	15.5	10.0
Plant & Machine Operator & Assembler	154	55,755	15.4	13.1	17.8	10.0
Elementary Occupations	116	40,854	18.2	15.1	21.4	15.0
Housewife	611	222,462	16.1	14.9	17.4	10.0
Unemployed	380	135,280	16.9	15.3	18.6	15.0
Household income						
Less than RM400	472	162,041	17.9	15.6	20.3	15.0
RM400 - RM699	801	272,823	15.8	14.6	17.0	10.0
RM700 - RM999	591	210,444	14.1	13.0	15.2	10.0
RM1000 - RM1999	1,480	537,888	14.2	13.4	15.0	10.0
RM2000 - RM2999	804	299,716	13.5	12.5	14.4	10.0
RM3000 - RM3999	383	144,846	13.1	11.8	14.5	10.0
RM4000 - RM4999	187	70,873	13.1	11.1	15.1	10.0
RM5000 & above	388	150,130	12.5	11.4	13.5	10.0

Table 6: Mode of transport used to seek treatment for recent illness

Mode of transport	Own transport			
	Estimated population	%	95% CI	
			Lower	Upper
MALAYSIA	1,643,690	83.5	82.0	85.0
Sex				
Male	804,528	85.2	83.5	86.9
Female	839,162	81.9	80.0	83.8
Strata				
Urban	1,000,027	85.6	83.7	87.5
Rural	643,663	80.4	78.0	82.8
Ethnicity				
Malays	1,044,763	87.0	85.5	88.5
Chinese	227,345	92.9	90.8	95.0
Indian	191,453	84.8	80.9	88.7
Other bumis	150,925	61.5	56.3	66.7
Others	29,204	55.4	45.8	64.9
Education				
None	87,680	64.7	59.3	70.1
Primary	516,611	81.6	79.5	83.7
Secondary	516,131	86.1	84.1	88.0
Tertiary	99,878	90.4	86.9	93.8
Marital status				
Not married	299,922	79.1	76.3	81.8
Married	629,442	83.9	82.0	85.7
Divorcee	18,500	75.2	64.9	85.5
Widow/Widower	55,044	70.9	64.8	77.0
Age				
0-4	318,570	87.2	84.6	89.8
5-9	229,224	87.2	84.3	90.1
10-14	143,883	82.9	79.3	86.5
15-19	116,227	82.3	78.5	86.0
20-24	95,536	82.7	78.4	86.9
25-29	99,746	81.1	76.7	85.6
30-34	84,307	84.3	79.9	88.7
35-39	80,611	80.6	75.7	85.5
40-44	104,601	86.5	82.7	90.2
45-49	80,310	82.1	77.4	86.9
50-54	84,739	79.6	74.8	84.4
55-59	55,884	81.9	76.3	87.4
60-64	40,316	75.7	68.8	82.6
65-69	43,295	76.5	69.8	83.1
70-74	30,938	77.3	69.5	85.0
75-79	18,411	81.4	72.2	90.6
Above 80	15,196	78.1	66.4	89.8

Table 6: Mode of transport used to seek treatment for recent illness (continue)

Mode of transport	Own transport			
	Estimated population	%	95% CI	
			Lower	Upper
Household income				
Less than RM400	109,326	63.7	57.7	69.7
RM400 - RM699	203,382	72.0	68.2	75.8
RM700 - RM999	177,124	81.5	77.8	85.3
RM1000 - RM1999	472,609	86.5	84.2	88.8
RM2000 - RM2999	278,126	89.7	87.3	92.2
RM3000 - RM3999	137,977	92.9	89.5	96.3
RM4000 - RM4999	67,947	92.1	87.6	96.6
RM5000 & above	147,426	93.5	90.8	96.1
Citizenship				
Malaysian	1,621,296	84.7	83.3	86.1
Non-Malaysian	22,394	41.0	31.6	50.3
State				
Johor	112,742	92.9	89.7	96.2
Kedah	243,966	90.2	87.7	92.7
Kelantan	139,385	83.3	79.0	87.7
Melaka	34,820	83.5	69.9	97.2
N.Sembilan	117,565	89.1	84.3	93.9
Pahang	101,170	82.2	76.7	87.8
Pulau Pinang	75,627	89.5	84.1	94.8
Perak	86,396	92.8	88.8	96.8
Perlis	2,466	100.0	-	-
Selangor	293,939	89.4	86.9	92.0
Terengganu	81,446	84.2	78.6	89.9
Sabah	133,830	56.3	50.7	61.8
Sarawak	92,445	76.3	69.7	82.8
KL	82,654	86.4	80.0	92.9
Labuan	45,239	84.6	75.8	93.5
Peninsular Malaysia	1,372,175	88.1	86.8	89.5
Occupation				
Senior Official & Manager	18,826	94.9	89.2	100.6
Professionals	67,088	90.0	85.7	94.3
Technical & Associate	82,575	92.7	89.4	95.9
Clerical Workers	61,570	87.2	82.2	92.2
Service Workers & Shop	142,002	80.3	76.2	84.3
Skilled Agricultural & Fishery	57,036	68.9	62.9	74.9
Craft & Related Trade Workers	54,577	87.4	82.3	92.4
Plant & Machine Operator & Assembler	49,676	88.1	82.9	93.2
Elementary Occupations	30,926	73.0	65.0	81.1
Housewife	181,257	78.8	75.4	82.2
Unemployed	107,148	73.8	69.3	78.3

Table 6: Mode of transport used to seek treatment for recent illness (continue)

Mode of transport	Public transport			
	Estimated population	%	Lower	Upper
MALAYSIA	167,408	8.5	7.3	9.7
Sex				
Male	66,000	7.0	5.7	8.3
Female	101,409	9.9	8.4	11.4
Strata				
Urban	85,309	7.3	5.9	8.7
Rural	82,100	10.3	8.3	12.2
Ethnicity				
Malays	61,504	5.1	4.2	6.1
Chinese	4,159	1.7	0.7	2.7
Indian	16,630	7.4	4.4	10.3
Other bumis	68,694	28.0	22.8	33.2
Others	16,421	31.1	22.8	39.5
Education				
None	29,541	21.8	17.1	26.5
Primary	61,413	9.7	8.1	11.3
Secondary	38,846	6.5	5.1	7.9
Tertiary	3,219	2.9	1.0	4.8
Marital status				
Not married	38,965	10.3	8.1	12.5
Married	62,474	8.3	6.9	9.7
Divorcee	4,289	17.4	8.6	26.3
Widow/Widower	12,727	16.4	11.5	21.3
Age				
0-4	25,667	7.0	5.0	9.0
5-9	15,269	5.8	4.0	7.7
10-14	16,044	9.2	6.3	12.1
15-19	11,226	7.9	5.2	10.7
20-24	9,252	8.0	5.0	11.0
25-29	12,274	10.0	6.6	13.3
30-34	6,026	6.0	3.1	8.9
35-39	11,091	11.1	7.2	14.9
40-44	6,060	5.0	2.6	7.4
45-49	9,344	9.6	5.8	13.3
50-54	13,673	12.8	8.9	16.8
55-59	8,450	12.4	7.7	17.0
60-64	6,905	13.0	7.6	18.4
65-69	6,858	12.1	7.2	17.0
70-74	4,562	11.4	5.5	17.3
75-79	2,528	11.2	3.9	18.5
Above 80	2,180	11.2	2.6	19.8

Table 6: Mode of transport used to seek treatment for recent illness (continue)

Mode of transport	Public transport			
	Estimated population	%	95% CI	
			Lower	Upper
Household income				
Less than RM400	40,144	23.4	17.8	29.0
RM400 - RM699	46,617	16.5	13.2	19.8
RM700 - RM999	21,086	9.7	6.9	12.5
RM1000 - RM1999	37,194	6.8	5.1	8.5
RM2000 - RM2999	11,392	3.7	2.0	5.4
RM3000 - RM3999	2,601	1.8	0.5	3.0
RM4000 - RM4999	292	0.4	-0.4	1.2
RM5000 & above	2,223	1.4	<0.1	2.8
Citizenship				
Malaysian	147,285	7.7	6.6	8.8
Non-Malaysian	19,776	36.2	27.7	44.7
State				
Johor	1,927	1.6	0.2	2.9
Kedah	6,548	2.4	1.0	3.9
Kelantan	9,531	5.7	3.2	8.2
Melaka	758	1.8	-0.8	4.5
N.Sembilan	8,053	6.1	2.0	10.2
Pahang	8,499	6.9	3.7	10.1
Pulau Pinang	1,783	2.1	0.3	4.0
Perak	3,408	3.7	0.7	6.7
Perlis	0	-	-	-
Selangor	12,730	3.9	2.5	5.2
Terengganu	6,862	7.1	3.7	10.5
Sabah	84,256	35.4	29.8	41.1
Sarawak	15,051	12.4	7.9	17.0
KL	3,542	3.7	0.9	6.5
Labuan	4,460	8.3	2.8	13.9
Peninsular Malaysia	63,641	4.1	3.4	4.8
Occupation				
Senior Official & Manager	0	-	-	-
Profesionals	640	0.9	-0.3	2.1
Technical & Associate	1,563	1.8	0.2	3.3
Clerical Workers	4,515	6.4	3.0	9.8
Service Workers & Shop	16,452	9.3	6.6	12.0
Skilled Agricultural & Fishery	13,387	16.2	11.3	21.0
Craft & Related Trade Workers	4,398	7.0	3.0	11.1
Plant & Machine Operator & Assembler	1,631	2.9	<0.1	5.7
Elementary Occupations	6,683	15.8	9.1	22.4
Housewife	30,076	13.1	10.3	15.9
Unemployed	22,280	15.3	11.5	19.2

Table 6: Mode of transport used to seek treatment for recent illness (continue)

Mode of transport	Walking			
	Estimated population	%	95% CI	
			Lower	Upper
MALAYSIA	109,725	5.6	4.7	6.4
Sex				
Male	46,196	4.9	3.8	6.0
Female	63,529	6.2	5.1	7.3
Strata				
Urban	62,499	5.4	4.2	6.5
Rural	47,226	5.9	4.5	7.3
Ethnicity				
Malays	63,101	5.3	4.2	6.3
Chinese	8,511	3.5	1.9	5.1
Indian	13,261	5.9	3.7	8.0
Other bumis	19,018	7.8	5.2	10.3
Others	5,835	11.1	5.4	16.7
Education				
None	8,790	6.5	4.1	8.9
Primary	37,159	5.9	4.5	7.2
Secondary	33,194	5.5	4.2	6.9
Tertiary	6,095	5.5	2.8	8.3
Marital status				
Not married	28,301	7.5	5.5	9.4
Married	39,504	5.3	4.3	6.3
Divorcee	352	1.4	-1.4	4.2
Widow/Widower	4,204	5.4	2.4	8.4
Age				
0-4	17,413	4.8	3.3	6.3
5-9	13,743	5.2	3.2	7.3
10-14	10,917	6.3	4.1	8.5
15-19	9,671	6.8	4.3	9.4
20-24	6,914	6.0	3.0	9.0
25-29	8,675	7.1	4.1	10.0
30-34	7,463	7.5	4.4	10.6
35-39	5,678	5.7	3.0	8.4
40-44	6,891	5.7	3.2	8.2
45-49	5,914	6.1	3.2	8.9
50-54	4,775	4.5	2.0	6.9
55-59	2,961	4.3	1.4	7.3
60-64	2,735	5.1	1.7	8.6
65-69	2,500	4.4	1.2	7.6
70-74	2,804	7.0	2.3	11.7
75-79	0	-	-	-
Above 80	671	3.5	-1.2	8.1

Table 6: Mode of transport used to seek treatment for recent illness (continue)

Mode of transport	Walking			
	Estimated population	%	95% CI	
			Lower	Upper
Household income				
Less than RM400	14,355	8.4	5.6	11.1
RM400 - RM699	20,635	7.3	5.3	9.3
RM700 - RM999	15,346	7.1	4.5	9.6
RM1000 - RM1999	26,819	4.9	3.5	6.3
RM2000 - RM2999	14,579	4.7	3.2	6.2
RM3000 - RM3999	5,757	3.9	1.3	6.5
RM4000 - RM4999	4,295	5.8	1.6	10.1
RM5000 & above	4,225	2.7	0.9	4.5
Citizenship				
Malaysian	101,125	5.3	4.4	6.1
Non-Malaysian	8,248	15.1	8.4	21.8
State				
Johor	2,677	2.2	0.6	3.8
Kedah	11,364	4.2	2.7	5.7
Kelantan	15,044	9.0	5.3	12.6
Melaka	5,571	13.4	-0.4	27.1
N.Sembilan	5,249	4.0	1.8	6.2
Pahang	8,645	7.0	2.2	11.9
Pulau Pinang	4,305	5.1	1.9	8.3
Perak	2,117	2.3	-0.1	4.7
Perlis	0	-	-	-
Selangor	13,892	4.2	2.6	5.9
Terengganu	5,318	5.5	2.7	8.4
Sabah	18,014	7.6	4.7	10.4
Sarawak	8,395	6.9	2.8	11.1
KL	7,872	8.2	3.6	12.8
Labuan	1,261	2.4	-0.4	5.2
Peninsular Malaysia	82,054	5.3	4.3	6.2
Occupation				
Senior Official & Manager	687	3.5	-1.3	8.2
Profesionals	4,971	6.7	3.0	10.4
Technical & Associate	4,020	4.5	1.9	7.2
Clerical Workers	3,182	4.5	1.0	8.0
Service Workers & Shop	11,400	6.4	3.5	9.4
Skilled Agricultural & Fishery	7,861	9.5	5.9	13.1
Craft & Related Trade Workers	2,840	4.6	1.5	7.6
Plant & Machine Operator & Assembler	2,585	4.6	1.5	7.7
Elementary Occupations	3,751	8.9	3.5	14.2
Housewife	14,161	6.2	4.3	8.0
Unemployed	6,401	4.4	2.4	6.4

Table 6: Mode of transport used to seek treatment for recent illness (continue)

Mode of transport	Estimated population	Others		
		%	95% CI	
			Lower	Upper
MALAYSIA	41,474	2.1	1.7	2.6
Sex				
Male	22,411	2.4	1.7	3.0
Female	19,063	1.9	1.3	2.4
Strata				
Urban	15,696	1.3	0.8	1.9
Rural	25,778	3.2	2.4	4.0
Ethnicity				
Malays	27,009	2.3	1.7	2.8
Chinese	3,111	1.3	0.4	2.1
Indian	3,713	1.6	0.1	3.2
Other bumis	6,350	2.6	0.9	4.3
Others	1,292	2.5	0.1	4.8
Education				
None	9,512	7.0	4.3	9.7
Primary	14,796	2.3	1.6	3.1
Secondary	9,182	1.5	1.0	2.1
Tertiary	1,033	0.9	-0.1	2.0
Marital status				
Not married	9,806	2.6	1.6	3.6
Married	16,236	2.2	1.5	2.8
Divorcee	1,475	6.0	0.3	11.7
Widow/Widower	5,307	6.8	3.5	10.2
Age				
0-4	2,635	0.7	0.1	1.4
5-9	4,167	1.6	0.4	2.8
10-14	2,439	1.4	0.4	2.5
15-19	3,759	2.7	1.1	4.2
20-24	3,095	2.7	0.8	4.5
25-29	2,256	1.8	0.4	3.3
30-34	2,201	2.2	0.6	3.8
35-39	1,619	1.6	0.2	3.0
40-44	3,104	2.6	0.9	4.2
45-49	1,401	1.4	<0.1	2.8
50-54	2,848	2.7	0.8	4.5
55-59	970	1.4	-0.2	3.0
60-64	1,824	3.4	0.5	6.4
65-69	3,981	7.0	3.0	11.0
70-74	1,745	4.4	0.6	8.1
75-79	1,677	7.4	1.1	13.7
Above 80	1,405	7.2	0.5	14.0

Table 6: Mode of transport used to seek treatment for recent illness (continue)

Mode of transport	Others			
	Estimated population	%	95% CI	
			Lower	Upper
Household income				
Less than RM400	7,363	4.3	2.4	6.1
RM400 - RM699	11,259	4.0	2.4	5.5
RM700 - RM999	3,027	1.4	0.3	2.5
RM1000 - RM1999	7,088	1.3	0.6	2.0
RM2000 - RM2999	4,324	1.4	0.5	2.3
RM3000 - RM3999	2,236	1.5	0.3	2.7
RM4000 - RM4999	1,247	1.7	<0.1	3.4
RM5000 & above	3,088	2.0	0.6	3.3
Citizenship				
Malaysian	37,210	1.9	1.5	2.4
Non-Malaysian	4,264	7.8	3.6	12.0
State				
Johor	3,205	2.6	0.4	4.9
Kedah	7,959	2.9	1.7	4.2
Kelantan	2,610	1.6	0.4	2.7
Melaka	533	1.3	-0.5	3.1
N.Sembilan	332	0.3	-0.3	0.8
Pahang	4,391	3.6	1.5	5.6
Pulau Pinang	2,457	2.9	-0.6	6.5
Perak	361	0.4	-0.4	1.2
Perlis	0	-	-	-
Selangor	6,510	2.0	0.8	3.1
Terengganu	3,059	3.2	0.6	5.8
Sabah	1,462	0.6	<0.1	1.3
Sarawak	5,317	4.4	1.5	7.3
KL	787	0.8	-0.3	2.0
Labuan	2,492	4.7	0.3	9.1
Peninsular Malaysia	32,203	2.1	1.6	2.6
Occupation				
Senior Official & Manager	323	1.6	-1.6	4.8
Professionals	1,851	2.5	0.3	4.6
Technical & Associate	639	0.7	-0.3	1.7
Clerical Workers	1,350	1.9	<0.1	3.8
Service Workers & Shop	5,863	3.3	1.6	5.0
Skilled Agricultural & Fishery	4,161	5.0	2.0	8.0
Craft & Related Trade Workers	361	0.6	-0.6	1.7
Plant & Machine Operator & Assembler	1,843	3.3	0.4	6.1
Elementary Occupations	994	2.4	-0.3	5.0
Housewife	4,124	1.8	0.8	2.8
Unemployed	7,765	5.4	3.1	7.6

Table 7: Pattern of health care utilization by type of facility used for treating recent illness

Type of facility	Hospital facilities			
	Estimated population	%	95% CI	
			lower	upper
MALAYSIA	499,054	18.2	17.0	19.4
Sex				
Male	246,095	18.8	17.3	20.3
Female	252,960	17.6	16.1	19.0
Strata				
Urban	306,601	18.3	16.8	19.8
Rural	192,454	17.9	15.9	19.9
Ethnicity				
Malays	273,417	16.3	14.9	17.8
Chinese	53,892	15.2	12.7	17.7
Indian	59,757	19.4	16.2	22.7
Other bumis	100,499	29.9	25.9	33.9
Others	11,489	15.6	10.1	21.0
Education				
None	41,092	24.1	20.2	28.0
Primary	178,644	19.7	17.8	21.5
Secondary	153,739	18.6	16.8	20.4
Tertiary	17,789	11.7	8.4	14.9
Marital status				
Not married	82,912	15.8	13.7	17.8
Married	203,212	19.8	18.1	21.5
Divorcee	8,924	24.1	15.7	32.6
Widow/Widower	24,941	25.8	20.5	31.1
Citizenship				
Malaysian	490,378	18.4	17.1	19.6
Non-Malaysian	8,677	11.4	7.2	15.7
Age				
0-4	77,720	15.1	13.0	17.2
5-9	70,129	17.9	15.3	20.6
10-14	45,618	18.4	15.1	21.7
15-19	30,970	16.1	12.8	19.3
20-24	23,089	14.2	10.9	17.4
25-29	23,091	13.8	10.4	17.2
30-34	25,672	17.5	13.7	21.3
35-39	26,752	19.0	14.9	23.1
40-44	30,287	17.9	14.3	21.6
45-49	27,625	19.9	15.6	24.3
50-54	33,785	24.8	20.4	29.3
55-59	21,923	23.4	18.2	28.6
60-64	17,814	25.7	19.7	31.7
65-69	17,181	24.2	18.0	30.4
70-74	13,697	25.6	18.5	32.6
75-79	6,668	24.3	14.5	34.1
Above 80	5,459	23.5	13.0	34.1

Table 7: Pattern of health care utilization by type of facility used for treating recent illness (continue)

Type of facility	Hospital facilities			
	Estimated population	%	95% CI	
			lower	upper
Household income				
Less than RM400	51,524	23.1	19.2	26.9
RM400 - RM699	76,830	19.8	16.9	22.7
RM700 - RM999	60,995	19.7	16.5	22.9
RM1000 - RM1999	136,807	18.4	16.3	20.5
RM2000 - RM2999	67,910	15.4	13.0	17.7
RM3000 - RM3999	35,032	15.5	12.0	19.0
RM4000 - RM4999	15,728	15.3	9.7	20.8
RM5000 & above	34,758	15.1	11.7	18.4
State				
Johor	43,589	16.9	13.4	20.5
Kedah	46,630	14.4	11.5	17.2
Kelantan	20,029	11.1	7.8	14.3
Melaka	11,818	18.5	9.9	27.1
N.Sembilan	12,489	8.4	5.2	11.7
Pahang	27,493	18.7	13.7	23.7
Pulau Pinang	17,939	16.3	11.6	21.1
Perak	48,002	24.4	19.1	29.6
Perlis	1,451	23.8	2.0	45.6
Selangor	62,064	12.5	10.5	14.6
Terengganu	20,995	17.0	11.4	22.6
Sabah	96,793	32.9	28.7	37.2
Sarawak	40,774	18.8	13.7	23.9
KL	29,913	24.4	18.7	30.1
Labuan	19,075	30.8	22.5	39.1
Peninsular Malaysia	342,412	15.7	14.5	16.9
Occupation				
Senior Official & Manager	2,117	7.2	1.0	13.4
Professionals	17,219	16.6	12.2	21.1
Technical & Associate	26,655	21.5	16.6	26.5
Clerical Workers	13,203	13.6	9.4	17.8
Service Workers & Shop	40,512	17.6	14.5	20.8
Skilled Agricultural & Fishery	19,108	17.3	12.8	21.7
Craft & Related Trade Workers	15,507	16.9	12.0	21.9
Plant & Machine Operator & Assembler	15,036	18.7	13.3	24.2
Elementary Occupations	13,169	21.1	15.1	27.1
Housewife	58,344	18.1	15.4	20.8
Unemployed	49,793	28.1	24.0	32.2

Table 7: Pattern of health care utilization by type of facility used for treating recent illness (continue)

Type of facility	Ambulatory facilities			
	Estimated population	%	95% CI	
			Lower	Upper
MALAYSIA	1,882,116	68.4	67.0	69.9
Sex				
Male	861,210	65.7	63.8	67.6
Female	1,020,906	70.9	69.2	72.7
Strata				
Urban	1,159,274	69.2	67.3	71.1
Rural	722,841	67.3	64.8	69.7
Ethnicity				
Malays	1,153,176	68.8	66.9	70.6
Chinese	253,771	71.5	68.0	74.9
Indian	227,597	74.0	70.2	77.8
Other bumis	198,970	59.1	54.7	63.5
Others	48,601	65.8	58.7	72.9
Education				
None	107,318	62.9	58.6	67.3
Primary	603,605	66.4	64.2	68.6
Secondary	521,825	63.2	61.0	65.5
Tertiary	110,034	72.1	67.6	76.6
Marital status				
Not married	326,607	62.0	59.2	64.9
Married	671,270	65.4	63.3	67.4
Divorcee	22,983	62.2	52.3	72.0
Widow/Widower	59,655	61.6	55.7	67.5
Citizenship				
Malaysian	1,830,180	68.5	67.0	70.0
Non-Malaysian	50,930	67.1	60.3	73.9
Age				
0-4	405,872	78.7	76.1	81.2
5-9	287,531	73.5	70.3	76.6
10-14	168,588	68.0	64.1	71.8
15-19	115,792	60.0	55.6	64.4
20-24	107,664	66.1	61.6	70.7
25-29	110,891	66.4	61.8	71.0
30-34	97,853	66.6	61.9	71.3
35-39	93,378	66.4	61.3	71.5
40-44	111,644	66.1	61.5	70.7
45-49	90,910	65.6	60.5	70.8
50-54	82,045	60.3	55.1	65.5
55-59	56,478	60.3	54.2	66.3
60-64	41,376	59.8	52.6	66.9
65-69	47,964	67.5	60.9	74.2
70-74	31,777	59.3	51.5	67.1
75-79	18,304	66.8	56.1	77.5
Above 80	13,376	57.7	45.7	69.7

Table 7: Pattern of health care utilization by type of facility used for treating recent illness (continue)

Type of facility	Ambulatory facilities			
	Estimated population	%	95% CI	
			Lower	Upper
Household income				
Less than RM400	145,255	65.0	60.5	69.5
RM400 - RM699	252,809	65.2	61.8	68.6
RM700 - RM999	204,502	66.0	62.3	69.7
RM1000 - RM1999	513,253	68.9	66.3	71.4
RM2000 - RM2999	306,382	69.3	66.0	72.6
RM3000 - RM3999	165,684	73.3	69.3	77.2
RM4000 - RM4999	73,994	71.7	65.3	78.2
RM5000 & above	169,912	73.7	69.5	77.8
State				
Johor	191,380	74.3	70.6	78.0
Kedah	200,958	61.9	57.8	66.1
Kelantan	129,825	71.8	66.6	76.9
Melaka	45,631	71.4	61.3	81.5
N.Sembilan	124,837	84.2	79.1	89.4
Pahang	97,406	66.1	59.4	72.9
Pulau Pinang	75,953	69.2	62.8	75.6
Perak	114,973	58.3	52.1	64.6
Perlis	3,971	65.1	41.0	89.3
Selangor	384,052	77.6	74.8	80.3
Terengganu	86,021	69.6	62.9	76.4
Sabah	164,908	56.1	51.4	60.8
Sarawak	144,291	66.5	60.4	72.5
KL	84,622	68.9	62.9	74.9
Labuan	33,286	53.7	44.1	63.3
Peninsular Malaysia	1,539,629	70.7	69.1	72.3
Occupation				
Senior Official & Manager	21,388	73.0	62.8	83.3
Professionals	74,480	72.0	66.7	77.3
Technical & Associate	73,511	59.4	53.8	64.9
Clerical Workers	72,520	74.8	69.3	80.2
Service Workers & Shop	149,709	65.1	61.1	69.1
Skilled Agricultural & Fishery	70,097	63.4	57.7	69.0
Craft & Related Trade Workers	61,411	67.1	61.1	73.1
Plant & Machine Operator & Assembler	46,221	57.6	50.7	64.6
Elementary Occupations	35,314	56.6	49.4	63.9
Housewife	221,584	68.6	65.3	72.0
Unemployed	98,910	55.9	51.5	60.3

Table 7: Pattern of health care utilization by type of facility used for treating recent illness (continue)

Type of facility	Self-care			
	Estimated population	%	95% CI	
			Lower	Upper
MALAYSIA	18,553	0.7	0.5	0.9
Sex				
Male	8,709	0.7	0.4	1.0
Female	9,844	0.7	0.4	1.0
Strata				
Urban	10,974	0.7	0.4	0.9
Rural	7,579	0.7	0.4	1.0
Ethnicity				
Malays	14,031	0.8	0.6	1.1
Chinese	3,208	0.9	0.3	1.5
Indian	868	0.3	-0.1	0.7
Other bumis	0	-	-	-
Others	446	0.6	-0.6	1.8
Education				
None	1,316	0.8	<0.1	1.5
Primary	7,464	0.8	0.5	1.2
Secondary	7,322	0.9	0.5	1.3
Tertiary	723	0.5	-0.2	1.1
Marital status				
Not married	6,858	1.3	0.7	1.9
Married	8,383	0.8	0.5	1.2
Divorcee	434	1.2	-1.1	3.5
Widow/Widower	379	0.4	-0.4	1.2
Citizenship				
Malaysian	17,753	0.7	0.5	0.9
Non-Malaysian	800	1.1	-0.4	2.5
Age				
0-4	860	0.2	-0.1	0.4
5-9	1,639	0.4	<0.1	0.8
10-14	1,470	0.6		1.2
15-19	2,306	1.2	0.2	2.2
20-24	1,327	0.8	<0.1	1.6
25-29	2,791	1.7	0.5	2.8
30-34	1,314	0.9	-0.1	1.9
35-39	742	0.5	-0.2	1.3
40-44	827	0.5	-0.2	1.2
45-49	1,851	1.3	0.2	2.5
50-54	1,695	1.3	<0.1	2.5
55-59	739	0.8	-0.3	1.9
60-64	0	-	-	-
65-69	335	0.5	-0.5	1.4
70-74	656	1.2	-0.5	2.9
75-79	0	-	-	-
Above 80	0	-	-	-

Table 7: Pattern of health care utilization by type of facility used for treating recent illness (continue)

Type of facility	Self-care			
	Estimated population	%	95% CI	
			Lower	Upper
Household income				
Less than RM400	1,461	0.7	<0.1	1.3
RM400 - RM699	3,512	0.9	0.3	1.5
RM700 - RM999	689	0.2	-0.1	0.5
RM1000 - RM1999	5,207	0.7	0.3	1.1
RM2000 - RM2999	4,467	1.0	0.4	1.6
RM3000 - RM3999	1,261	0.6	-0.1	1.2
RM4000 - RM4999	921	0.9	-0.1	1.9
RM5000 & above	700	0.3	-0.1	0.7
State				
Johor	1,825	0.7	0.1	1.3
Kedah	2,139	0.7	0.1	1.2
Kelantan	323	0.2	-0.2	0.5
Melaka	533	0.8	-0.3	2.0
N.Sembilan	332	0.2	-0.2	0.7
Pahang	1,487	1.0	<0.1	2.0
Pulau Pinang	0	-	-	-
Perak	826	0.4	-0.2	1.0
Perlis	0	-	-	-
Selangor	5,206	1.1	0.4	1.7
Terengganu	1,676	1.4	<0.1	2.7
Sabah	0	-	-	-
Sarawak	2,632	1.2	0.3	2.1
KL	1,574	1.3	0.1	2.5
Labuan	0	-	-	-
Peninsular Malaysia	15,921	0.7	0.5	1.0
Occupation				
Senior Official & Manager	0	-	-	-
Professionals	426	0.4	-0.4	1.2
Technical & Associate	0	-	-	-
Clerical Workers	1,101	1.1	-0.2	2.4
Service Workers & Shop	716	0.3	-0.1	0.8
Skilled Agricultural & Fishery	335	0.3	-0.3	0.9
Craft & Related Trade Workers	1,508	1.7	<0.1	3.3
Plant & Machine Operator & Assembler	768	1.0	-0.4	2.3
Elementary Occupations	1,200	1.9	-0.3	4.1
Housewife	5,326	1.7	0.8	2.5
Unemployed	897	0.5	-0.1	1.1

Table 7: Pattern of health care utilization by type of facility used for treating recent illness (continue)

Type of facility	T/CM care			
	Estimated population	%	95% CI Lower	Upper
MALAYSIA	25,235	0.9	0.7	1.2
Sex				
Male	14,941	1.1	0.8	1.5
Female	10,294	0.7	0.4	1.0
Strata				
Urban	12,992	0.8	0.5	1.1
Rural	12,243	1.1	0.7	1.5
Ethnicity				
Malays	17,062	1.0	0.7	1.3
Chinese	4,305	1.2	0.4	2.0
Indian	1,234	0.4	-0.1	0.9
Other bumis	2,635	0.8	0.2	1.3
Others	0	-	-	-
Education				
None	2,719	1.6	0.5	2.7
Primary	8,933	1.0	0.6	1.4
Secondary	11,125	1.4	0.9	1.9
Tertiary	2,123	1.4	0.2	2.6
Marital status				
Not married	8,191	1.6	0.9	2.2
Married	12,992	1.3	0.8	1.7
Divorcee	323	0.9	-0.8	2.6
Widow/Widower	1,083	1.1	-0.2	2.4
Citizenship				
Malaysian	25,235	0.9	0.7	1.2
Non-Malaysian	0	-	-	-
Age				
0-4	0	-	-	-
5-9	673	0.2	-0.1	0.4
10-14	3,677	1.5	0.6	2.4
15-19	1,247	0.7	-0.1	1.4
20-24	3,865	2.4	0.9	3.8
25-29	2,715	1.6	0.4	2.8
30-34	1,747	1.2	0.1	2.2
35-39	739	0.5	-0.2	1.3
40-44	1,842	1.1	0.1	2.0
45-49	1,305	0.9	<0.1	1.9
50-54	2,170	1.6	0.3	2.9
55-59	2,260	2.4	0.5	4.3
60-64	305	0.4	-0.4	1.3
65-69	290	0.4	-0.4	1.2
70-74	983	1.8	-0.2	3.9
75-79	669	2.4	-0.9	5.8
Above 80	748	3.2	-1.1	7.6

Table 7: Pattern of health care utilization by type of facility used for treating recent illness (continue)

Type of facility	T/CM care			
	Estimated population	%	95% CI	
			Lower	Upper
Household income				
Less than RM400	3,046	1.4	0.2	2.5
RM400 - RM699	3,599	0.9	0.4	1.5
RM700 - RM999	4,467	1.4	0.6	2.3
RM1000 - RM1999	4,711	0.6	0.3	1.0
RM2000 - RM2999	3,229	0.7	0.3	1.2
RM3000 - RM3999	2,665	1.2	0.3	2.1
RM4000 - RM4999	290	0.3	-0.3	0.8
RM5000 & above	2,782	1.2	0.2	2.2
State				
Johor	2,576	1.0	0.2	1.8
Kedah	4,744	1.5	0.5	2.4
Kelantan	1,320	0.7	<0.1	1.4
Melaka	983	1.5	-0.5	3.6
N.Sembilan	664	0.5	-0.4	1.3
Pahang	1,984	1.4	0.2	2.5
Pulau Pinang	1,413	1.3	-0.2	2.8
Perak	2,477	1.3	0.3	2.3
Perlis	338	5.6	-5.4	16.5
Selangor	4,053	0.8	0.3	1.3
Terengganu	1,603	1.3	0.1	2.5
Sabah	1,200	0.4	<0.1	0.8
Sarawak	1,588	0.7	<0.1	1.4
KL	0	-	-	-
Labuan	292	0.5	-0.5	1.4
Peninsular Malaysia	22,155	1.0	0.7	1.3
Occupation				
Senior Official & Manager	1,178	4.0	-0.5	8.5
Professionals	1,442	1.4	<0.1	2.8
Technical & Associate	1,086	0.9	-0.1	1.9
Clerical Workers	1,403	1.5	<0.1	2.9
Service Workers & Shop	2,425	1.1	0.3	1.9
Skilled Agricultural & Fishery	2,593	2.3	0.6	4.1
Craft & Related Trade Workers	694	0.8	-0.3	1.8
Plant & Machine Operator & Assembler	1,923	2.4	0.3	4.5
Elementary Occupations	615	1.0	-0.4	2.3
Housewife	3,041	0.9	0.3	1.6
Unemployed	2,671	1.5	0.5	2.6

Table 7: Pattern of health care utilization by type of facility used for treating recent illness (continue)

Type of facility	Others			
	Estimated population	%	95% CI	
			Lower	Upper
MALAYSIA	324,920	11.8	10.9	12.8
Sex				
Male	179,684	13.7	12.4	15.0
Female	145,236	10.1	9.0	11.2
Strata				
Urban	185,255	11.1	9.8	12.3
Rural	139,666	13.0	11.5	14.5
Ethnicity				
Malays	219,052	13.1	11.8	14.3
Chinese	39,995	11.3	9.0	13.5
Indian	18,051	5.9	4.2	7.6
Other bumis	34,512	10.3	8.0	12.5
Others	13,310	18.0	12.4	23.7
Education				
None	18,078	10.6	7.9	13.3
Primary	110,128	12.1	10.7	13.6
Secondary	131,282	15.9	14.3	17.6
Tertiary	21,876	14.3	10.9	17.8
Marital status				
Not married	101,858	19.4	17.1	21.6
Married	131,392	12.8	11.4	14.2
Divorcee	4,299	11.6	5.2	18.1
Widow/Widower	10,808	11.2	7.4	14.9
Citizenship				
Malaysian	308,699	11.6	10.6	12.5
Non-Malaysian	15,509	20.4	14.5	26.3
Age				
0-4	31,558	6.1	4.6	7.6
5-9	31,403	8.0	6.1	9.9
10-14	28,723	11.6	9.1	14.1
15-19	42,605	22.1	18.4	25.7
20-24	26,871	16.5	12.9	20.1
25-29	27,576	16.5	13.0	20.0
30-34	20,356	13.9	10.4	17.4
35-39	19,096	13.6	9.9	17.3
40-44	24,346	14.4	11.2	17.7
45-49	16,822	12.1	8.8	15.5
50-54	16,370	12.0	8.5	15.5
55-59	12,345	13.2	8.8	17.6
60-64	9,760	14.1	8.7	19.5
65-69	5,242	7.4	3.7	11.1
70-74	6,475	12.1	6.6	17.6
75-79	1,763	6.4	1.0	11.9
Above 80	3,609	15.6	6.6	24.5

Table 7: Pattern of health care utilization by type of facility used for treating recent illness (continue)

Type of facility	Others			
	Estimated population	%	95% CI	
			Lower	Upper
Household income				
Less than RM400	22,217	9.9	7.4	12.5
RM400 - RM699	51,051	13.2	10.9	15.5
RM700 - RM999	39,136	12.6	10.1	15.2
RM1000 - RM1999	85,175	11.4	9.7	13.2
RM2000 - RM2999	60,308	13.6	11.3	16.0
RM3000 - RM3999	21,497	9.5	6.9	12.1
RM4000 - RM4999	12,206	11.8	7.9	15.8
RM5000 & above	22,555	9.8	7.2	12.4
State				
Johor	18,193	7.1	5.1	9.0
Kedah	69,974	21.6	18.2	24.9
Kelantan	29,384	16.3	12.2	20.3
Melaka	4,956	7.8	3.3	12.2
N.Sembilan	9,865	6.7	3.3	10.0
Pahang	18,917	12.8	8.3	17.4
Pulau Pinang	14,482	13.2	8.5	17.8
Perak	30,823	15.6	10.5	20.8
Perlis	338	5.6	-5.4	16.5
Selangor	39,784	8.0	6.3	9.8
Terengganu	13,230	10.7	7.4	14.0
Sabah	31,181	10.6	8.3	12.9
Sarawak	27,749	12.8	9.4	16.2
KL	6,691	5.5	2.6	8.3
Labuan	9,352	15.1	9.6	20.6
Peninsular Malaysia	256,637	11.8	10.7	12.9
Occupation				
Senior Official & Manager	4,609	15.7	7.4	24.1
Professionals	9,897	9.6	6.1	13.1
Technical & Associate	22,610	18.3	13.9	22.6
Clerical Workers	8,778	9.1	5.6	12.5
Service Workers & Shop	36,554	15.9	12.9	18.9
Skilled Agricultural & Fishery	18,514	16.7	12.6	20.9
Craft & Related Trade Workers	12,433	13.6	9.2	18.0
Plant & Machine Operator & Assembler	16,284	20.3	14.7	26.0
Elementary Occupations	12,077	19.4	13.6	25.1
Housewife	34,710	10.8	8.5	13.0
Unemployed	24,736	14.0	10.9	17.0

Table 8: Pattern of utilization of hospitals for treatment of recent illness

Hospitals	Government hospital				
	n	Estimated population	%	95% CI	
				Lower	Upper
MALAYSIA	1,227	440,522	88.3	86.3	90.3
Sex					
Male	600	216,645	88.0	85.3	90.7
Female	627	223,876	88.5	85.7	91.3
Strata					
Urban	657	259,007	84.5	81.5	87.5
Rural	570	181,514	94.3	92.3	96.4
Ethnicity					
Malays	662	242,465	88.7	86.0	91.4
Chinese	99	38,568	71.6	63.2	80.0
Indian	124	49,992	83.7	76.9	90.5
Other bumis	309	98,756	98.3	96.7	99.8
Others	33	10,740	93.5	84.6	102.4
Education					
None	114	38,642	94.0	89.4	98.7
Primary	444	158,996	89.0	85.8	92.2
Secondary	366	134,919	87.8	84.5	91.0
Tertiary	37	14,206	79.9	68.5	91.3
Marital status					
Not married	213	76,693	92.5	88.9	96.1
Married	499	180,210	88.7	85.9	91.5
Divorcee	24	8,924	100.0	-	-
Widow/Widower	67	23,353	93.6	87.6	99.7
Age					
0-4	190	66,402	85.4	80.1	90.7
5-9	161	58,042	82.8	76.6	88.9
10-14	112	40,153	88.0	82.0	94.1
15-19	79	28,175	91.0	84.5	97.4
20-24	58	21,608	93.6	87.4	99.8
25-29	58	21,540	93.3	86.9	99.7
30-34	57	20,753	80.8	71.3	90.4
35-39	65	23,221	86.8	78.8	94.8
40-44	75	26,800	88.5	81.4	95.6
45-49	66	23,966	86.8	78.6	94.9
50-54	87	31,499	93.2	88.0	98.5
55-59	55	19,925	90.9	83.3	98.5
60-64	46	16,686	93.7	86.7	100.7
65-69	43	15,447	89.9	80.5	99.3
70-74	38	13,040	95.2	88.7	101.7
75-79	18	6,234	93.5	81.2	105.8
Above 80	15	5,459	100.0	-	-

Table 8: Pattern of utilization of hospitals for treatment of recent illness (continue)

Hospitals	Government hospital				
	n	Estimated population	%	95% CI	
				Lower	Upper
State					
Johor	86	34,197	78.5	69.1	87.8
Kedah	112	40,954	87.8	81.7	93.9
Kelantan	56	18,680	93.3	86.9	99.6
Melaka	27	10,568	89.4	76.5	102.3
N.Sembilan	31	11,433	91.5	82.3	100.8
Pahang	61	24,022	87.4	79.2	95.5
Pulau Pinang	38	13,134	73.2	59.8	86.6
Perak	108	44,489	92.7	87.0	98.4
Perlis	4	1,451	100.0	-	-
Selangor	120	48,322	77.9	70.9	84.9
Terengganu	58	19,859	94.6	86.8	102.4
Sabah	301	92,102	95.2	92.3	98.0
Sarawak	104	38,739	95.0	89.7	100.4
KL	62	24,403	81.6	71.8	91.4
Labuan	59	18,168	95.2	90.5	100.0
Peninsular Malaysia	763	291,513	85.1	82.5	87.8
Citizenship					
Malaysian	1,207	433,832	88.5	86.5	90.5
Non-Malaysian	20	6,690	77.1	59.1	95.1
Occupation					
Senior Official & Manager	3	1,218	57.5	13.3	101.8
Professionals	41	15,210	88.3	78.6	98.0
Technical & Associate	62	23,343	87.6	79.3	95.8
Clerical Workers	30	10,863	82.3	69.3	95.2
Service Workers & Shop	103	37,382	92.3	87.1	97.5
Skilled Agricultural & Fishery	55	18,249	95.5	89.4	101.6
Craft & Related Trade Workers	35	13,499	87.1	76.7	97.4
Plant & Machine Operator & Assembler	35	12,749	84.8	73.4	96.2
Elementary Occupations	32	11,436	86.8	75.9	97.7
Housewife	148	52,613	90.2	85.5	94.9
Unemployed	133	47,026	94.4	90.4	98.5
Household income					
Less than RM400	148	49,848	96.8	93.5	100.0
RM400 - RM699	217	74,250	96.6	94.1	99.2
RM700 - RM999	157	57,678	94.6	91.0	98.1
RM1000 - RM1999	339	122,951	89.9	86.4	93.3
RM2000 - RM2999	162	59,291	87.3	81.9	92.8
RM3000 - RM3999	72	26,735	76.3	66.1	86.5
RM4000 - RM4999	33	12,313	78.3	63.7	92.9
RM5000 & above	57	21,753	62.6	50.7	74.5

**Table 8: Pattern of utilization of hospitals for treatment of recent illness
(continue)**

Hospitals	Private hospital				
	n	Estimated population	%	95% CI	
				Lower	Upper
MALAYSIA	151	58,533	11.7	9.7	13.7
Sex					
Male	76	29,449	12.0	9.3	14.7
Female	75	29,083	11.5	8.7	14.3
Strata					
Urban	117	47,594	15.5	12.5	18.5
Rural	34	10,939	5.7	3.6	7.7
Ethnicity					
Malays	81	30,952	11.3	8.6	14.0
Chinese	39	15,324	28.4	20.1	36.8
Indian	24	9,765	16.3	9.6	23.1
Other bumis	5	1,743	1.7	0.2	3.3
Others	2	749	6.5	-2.4	15.4
Education					
None	6	2,450	6.0	1.3	10.6
Primary	51	19,648	11.0	7.8	14.2
Secondary	48	18,820	12.2	9.0	15.5
Tertiary	9	3,584	20.2	8.7	31.6
Marital status					
Not married	16	6,219	7.5	3.9	11.1
Married	59	23,002	11.3	8.6	14.1
Divorcee	0	0	-	-	-
Widow/Widower	4	1,588	6.4	0.3	12.4
Age					
0-4	30	11,318	14.6	9.3	19.9
5-9	31	12,087	17.2	11.1	23.4
10-14	14	5,466	12.0	6.0	18.0
15-19	7	2,795	9.0	2.6	15.5
20-24	4	1,482	6.4	0.2	12.6
25-29	4	1,551	6.7	0.3	13.1
30-34	13	4,919	19.2	9.6	28.7
35-39	9	3,531	13.2	5.2	21.2
40-44	9	3,487	11.5	4.4	18.6
45-49	9	3,659	13.3	5.1	21.4
50-54	6	2,286	6.8	1.5	12.1
55-59	5	1,998	9.1	1.5	16.8
60-64	3	1,128	6.3	-0.7	13.3
65-69	4	1,734	10.1	0.7	19.5
70-74	2	657	4.8	-1.7	11.3
75-79	1	434	6.5	-5.8	18.8
Above 80	0	0	-	-	-

Table 8: Pattern of utilization of hospitals for treatment of recent illness (continue)

Hospitals	Private hospital				
	n	Estimated population	%	95% CI	
				Lower	Upper
State					
Johor	23	9,391	21.6	12.2	30.9
Kedah	15	5,675	12.2	6.1	18.3
Kelantan	4	1,349	6.7	0.4	13.1
Melaka	3	1,249	10.6	-2.3	23.5
N.Sembilan	3	1,056	8.5	-0.8	17.7
Pahang	9	3,472	12.6	4.5	20.8
Pulau Pinang	13	4,805	26.8	13.4	40.2
Perak	8	3,513	7.3	1.6	13.0
Perlis	0	0	-	-	-
Selangor	33	13,742	22.1	15.2	29.1
Terengganu	3	1,137	5.4	-2.4	13.2
Sabah	15	4,692	4.9	2.0	7.7
Sarawak	5	2,034	5.0	-0.4	10.3
KL	14	5,510	18.4	8.6	28.2
Labuan	3	908	4.8	0.0	9.5
Peninsular Malaysia	128	50,899	14.9	12.2	17.5
Citizenship					
Malaysian	145	56,546	11.5	9.5	13.6
Non-Malaysian	6	1,987	22.9	4.9	40.9
Occupation					
Senior Official & Manager	2	899	42.5	-1.8	86.7
Profesionals	5	2,010	11.7	2.0	21.4
Technical & Associate	8	3,312	12.4	4.2	20.7
Clerical Workers	6	2,341	17.7	4.8	30.7
Service Workers & Shop	8	3,130	7.7	2.5	12.9
Skilled Agricultural & Fishery	2	859	4.5	-1.6	10.6
Craft & Related Trade Workers	5	2,008	13.0	2.6	23.3
Plant & Machine Operator & Assembler	6	2,287	15.2	3.8	26.6
Elementary Occupations	5	1,733	13.2	2.3	24.1
Housewife	15	5,731	9.8	5.1	14.5
Unemployed	7	2,767	5.6	1.5	9.6
Household income					
Less than RM400	5	1,676	3.3	<0.1	6.5
RM400 - RM699	8	2,580	3.4	0.8	5.9
RM700 - RM999	9	3,317	5.4	1.9	9.0
RM1000 - RM1999	36	13,857	10.1	6.7	13.6
RM2000 - RM2999	22	8,619	12.7	7.2	18.2
RM3000 - RM3999	20	8,297	23.7	13.5	33.9
RM4000 - RM4999	9	3,415	21.7	7.1	36.3
RM5000 & above	32	13,005	37.4	25.5	49.4

Table 9: Pattern of clinics utilization for treatment of recent illness

Clinics	Government clinic				
	n	Estimated population	%	95% CI	
				Lower	Upper
MALAYSIA	1,996	713,638	37.9	36.0	39.8
Sex					
Male	885	315,681	36.7	34.3	39.0
Female	1,111	397,956	39.0	36.7	41.3
Strata					
Urban	753	306,626	26.5	24.3	28.6
Rural	1,243	407,012	56.3	53.2	59.5
Ethnicity					
Malays	1,284	457,793	39.7	37.3	42.1
Chinese	126	49,250	19.4	15.8	23.0
Indian	204	78,953	34.7	29.1	40.3
Other bumis	339	113,701	57.1	50.8	63.5
Others	43	13,942	28.7	20.5	36.8
Education					
None	177	60,887	56.7	50.8	62.7
Primary	750	266,557	44.2	41.3	47.0
Secondary	476	174,365	33.4	30.7	36.2
Tertiary	45	17,464	15.9	11.5	20.2
Marital status					
Not married	323	116,933	35.8	32.5	39.2
Married	748	268,401	40.0	37.4	42.6
Divorcee	28	9,862	42.9	30.8	55.0
Widow/Widower	84	29,743	49.9	41.9	57.9
Age					
0-4	410	146,494	36.1	32.7	39.5
5-9	283	99,547	34.6	30.7	38.5
10-14	202	71,596	42.5	37.5	47.5
15-19	133	48,457	41.9	36.4	47.3
20-24	87	31,826	29.6	24.1	35.0
25-29	85	31,419	28.3	22.9	33.7
30-34	86	30,107	30.8	25.1	36.5
35-39	88	31,738	34.0	27.9	40.1
40-44	108	39,461	35.3	29.7	41.0
45-49	98	35,472	39.0	32.6	45.4
50-54	100	35,528	43.3	36.6	50.0
55-59	79	28,562	50.6	42.4	58.7
60-64	66	23,242	56.2	47.0	65.4
65-69	75	25,933	54.1	45.0	63.1
70-74	50	18,211	57.3	46.5	68.1
75-79	24	8,603	47.0	32.4	61.6
Above 80	20	6,772	50.6	34.6	66.7

Table 9: Pattern of clinics utilization for treatment of recent illness (continue)

Clinics	Government clinic				
	n	Estimated population	%	95% CI	
				Lower	Upper
State					
Johor	186	67,350	35.2	29.5	40.9
Kedah	233	81,245	40.4	34.4	46.4
Kelantan	229	75,045	57.8	50.2	65.4
Melaka	43	17,306	37.9	26.2	49.6
N.Sembilan	117	41,307	33.1	25.4	40.8
Pahang	119	43,767	44.9	35.0	54.9
Pulau Pinang	47	16,721	22.0	15.5	28.5
Perak	134	53,549	46.6	39.4	53.8
Perlis	4	1,549	39.0	10.3	67.7
Selangor	226	91,289	23.8	20.1	27.5
Terengganu	121	39,643	46.1	36.5	55.7
Sabah	215	65,367	39.6	33.0	46.3
Sarawak	260	96,651	67.0	60.5	73.5
KL	43	16,924	20.0	13.2	26.8
Labuan	19	5,922	17.8	9.5	26.0
Peninsular Malaysia	1,502	545,697	35.4	33.4	37.5
Citizenship					
Malaysian	1,964	703,217	38.4	36.5	40.4
Non-Malaysian	30	9,750	19.1	12.6	25.7
Occupation					
Senior Official & Manager	8	3,253	15.2	5.3	25.1
Professionals	35	13,087	17.6	12.2	22.9
Technical & Associate	54	20,426	27.8	21.5	34.1
Clerical Workers	38	14,038	19.4	13.7	25.0
Service Workers & Shop	132	47,695	31.9	27.1	36.7
Skilled Agricultural & Fishery	143	48,123	68.7	62.0	75.3
Craft & Related Trade Workers	51	19,655	32.0	24.5	39.5
Plant & Machine Operator & Assembler	39	13,989	30.3	22.6	38.0
Elementary Occupations	39	13,752	38.9	29.0	48.9
Housewife	306	110,227	49.8	45.5	54.0
Unemployed	144	50,590	51.2	45.1	57.2
Household income					
Less than RM400	266	91,730	63.2	57.2	69.1
RM400 - RM699	453	156,027	61.7	57.3	66.1
RM700 - RM999	289	103,074	50.4	45.2	55.6
RM1000 - RM1999	538	194,317	37.9	34.5	41.2
RM2000 - RM2999	207	76,900	25.1	21.5	28.7
RM3000 - RM3999	97	36,460	22.0	17.2	26.8
RM4000 - RM4999	32	12,262	16.6	10.0	23.2
RM5000 & above	70	26,686	15.7	11.8	19.6

Table 9: Pattern of clinics utilization for treatment of recent illness (continue)

Clinics	Private clinic				
	n	Estimated population	%	95% CI	
				Lower	Upper
MALAYSIA	3,087	1,168,478	62.1	60.2	64.0
Sex					
Male	1,446	545,528	63.3	61.0	65.7
Female	1,641	622,949	61.0	58.7	63.3
Strata					
Urban	2,104	852,649	73.6	71.4	75.7
Rural	983	315,829	43.7	40.6	46.8
Ethnicity					
Malays	1,840	695,383	60.3	57.9	62.7
Chinese	518	204,521	80.6	77.0	84.2
Indian	371	148,645	65.3	59.7	70.9
Other bumis	258	85,269	42.9	36.6	49.2
Others	100	34,659	71.3	63.2	79.5
Education					
None	131	46,431	43.3	37.3	49.3
Primary	888	337,048	55.8	53.0	58.7
Secondary	913	347,460	66.6	63.8	69.4
Tertiary	236	92,570	84.1	79.8	88.5
Marital status					
Not married	549	209,674	64.2	60.9	67.6
Married	1,064	402,869	60.0	57.4	62.6
Divorcee	35	13,121	57.1	45.0	69.2
Widow/Widower	79	29,912	50.1	42.2	58.1
Age					
0-4	693	259,378	63.9	60.6	67.3
5-9	495	187,984	65.4	61.5	69.3
10-14	255	96,991	57.5	52.5	62.5
15-19	178	67,335	58.2	52.7	63.6
20-24	201	75,838	70.4	65.0	75.9
25-29	207	79,472	71.7	66.3	77.1
30-34	179	67,746	69.2	63.5	74.9
35-39	160	61,641	66.0	59.9	72.1
40-44	190	72,184	64.7	59.0	70.3
45-49	145	55,438	61.0	54.6	67.4
50-54	122	46,517	56.7	50.0	63.4
55-59	73	27,916	49.4	41.3	57.6
60-64	49	18,134	43.8	34.6	53.0
65-69	60	22,032	45.9	36.9	55.0
70-74	36	13,567	42.7	31.9	53.5
75-79	26	9,701	53.0	38.4	67.6
Above 80	18	6,604	49.4	33.3	65.4

Table 9: Pattern of clinics utilization for treatment of recent illness (continue)

Clinics	Private clinic				
	n	Estimated population	%	95% CI	
				Lower	Upper
State					
Johor	315	124,030	64.8	59.1	70.5
Kedah	326	119,713	59.6	53.6	65.6
Kelantan	164	54,780	42.2	34.6	49.8
Melaka	70	28,325	62.1	50.4	73.8
N.Sembilan	225	83,530	66.9	59.2	74.6
Pahang	137	53,639	55.1	45.1	65.0
Pulau Pinang	168	59,232	78.0	71.5	84.5
Perak	148	61,424	53.4	46.2	60.6
Perlis	6	2,422	61.0	32.3	89.7
Selangor	697	292,763	76.2	72.5	80.0
Terengganu	133	46,377	53.9	44.3	63.5
Sabah	321	99,542	60.4	53.7	67.0
Sarawak	118	47,640	33.0	26.5	39.5
KL	172	67,697	80.0	73.2	86.8
Labuan	87	27,364	82.2	74.0	90.5
Peninsular Malaysia	2,561	993,932	64.6	62.5	66.6
Citizenship					
Malaysian	2,969	1,126,964	61.6	59.7	63.5
Non-Malaysian	117	41,179	80.9	74.3	87.4
Occupation					
Senior Official & Manager	46	18,135	84.8	74.9	94.7
Profesionals	157	61,393	82.4	77.1	87.8
Technical & Associate	139	53,085	72.2	65.9	78.6
Clerical Workers	152	58,482	80.6	75.0	86.3
Service Workers & Shop	266	102,014	68.1	63.3	72.9
Skilled Agricultural & Fishery	64	21,973	31.4	24.7	38.0
Craft & Related Trade Workers	110	41,756	68.0	60.5	75.5
Plant & Machine Operator & Assembler	86	32,231	69.7	62.0	77.4
Elementary Occupations	62	21,562	61.1	51.1	71.1
Housewife	290	111,356	50.3	46.0	54.5
Unemployed	130	48,320	48.9	42.8	54.9
Household income					
Less than RM400	148	53,525	36.9	30.9	42.8
RM400 - RM699	278	96,782	38.3	33.9	42.7
RM700 - RM999	279	101,428	49.6	44.4	54.8
RM1000 - RM1999	849	318,936	62.1	58.8	65.5
RM2000 - RM2999	595	229,481	74.9	71.3	78.5
RM3000 - RM3999	332	129,224	78.0	73.2	82.8
RM4000 - RM4999	157	61,732	83.4	76.8	90.0
RM5000 & above	359	143,226	84.3	80.4	88.2

Table 10: Reasons for not seeking care for recent illness

Reasons for not seeking care	Severity of illness		Ability to self medicate		Availability of time to seek treatment	
	Estimated		Estimated		Estimated	
	population	%	population	%	population	%
MALAYSIA	1,281,467	66.2	478,959	24.7	5,287	0.3
Sex						
Male	652,316	68.0	227,758	23.8	2,166	0.2
Female	629,149	64.4	251,200	25.7	3,120	0.3
Strata						
Urban	754,290	65.7	301,562	26.3	2,757	0.2
Rural	527,175	67.0	177,396	22.5	2,530	0.3
Ethnicity						
Malays	802,885	67.7	288,352	24.3	2,856	0.2
Chinese	193,801	69.8	59,648	21.5	773	0.3
Indian	85,550	58.7	49,387	33.9	0	-
Other bumis	153,518	61.0	59,508	23.7	749	0.3
Others	45,711	60.8	22,063	29.3	908	1.2
Education level						
None	76,164	61.9	28,201	22.9	323	0.3
Primary	470,783	67.0	167,431	23.8	1,835	0.3
Secondary	519,932	67.6	187,282	24.3	2,411	0.3
Tertiary	75,508	68.7	29,127	26.5	0	-
Citizenship						
Malaysian	1,242,295	66.7	454,585	24.4	4,379	0.2
Non-Malaysian	39,170	53.3	24,373	33.1	908	1.2
Age						
0-4	93,802	59.3	47,166	29.8	718	0.5
5-9	108,187	62.9	48,226	28.0	0	-
10-14	181,358	67.7	59,651	22.3	348	0.1
15-19	205,354	67.4	69,057	22.7	0	-
20-24	121,230	67.5	44,407	24.7	872	0.5
25-29	91,576	69.7	32,172	24.5	425	0.3
30-34	74,293	65.8	29,086	25.7	671	0.6
35-39	75,793	70.3	24,367	22.6	0	-
40-44	69,243	68.9	24,587	24.5	426	0.4
45-49	63,607	65.1	24,131	24.7	335	0.3
50-54	56,384	64.3	23,843	27.2	323	0.4
55-59	44,383	66.3	17,517	26.2	434	0.7
60-64	29,019	60.5	13,050	27.2	400	0.8
65-69	27,397	66.8	10,606	25.9	0	-
70-74	20,503	68.5	6,360	21.2	0	-
75-79	10,478	67.3	2,294	14.7	0	-
Above 80	8,536	64.1	2,440	18.3	335	2.5
Marital status						
Not married	464,811	68.7	152,196	22.5	580	0.1
Married	486,366	67.1	176,195	24.3	3,306	0.5
Divorcee	10,319	51.4	6,492	32.3	0	-
Widow/Widower	37,743	61.7	17,959	29.4	335	0.6

Table 10: Reasons for not seeking care for recent illness (continue)

Reasons for not seeking care	Severity of illness		Ability to self medicate		Availability of time to seek treatment	
	Estimated		Estimated		Estimated	
	population	%	population	%	population	%
State						
Johor	110,795	64.1	46,080	26.7	426	0.3
Kedah	138,871	74.0	28,416	15.1	1,069	0.6
Kelantan	102,758	75.6	25,337	18.6	0	-
Melaka	48,538	80.2	9,710	16.0	0	-
N.Sembilan	59,766	54.1	45,224	41.0	0	-
Pahang	69,224	74.1	17,358	18.6	851	0.9
Pulau Pinang	49,578	73.5	15,831	23.5	0	-
Perak	80,859	78.0	11,306	10.9	0	-
Perlis	6,722	90.9	677	9.2	0	-
Selangor	206,575	58.6	126,568	35.9	1,014	0.3
Terengganu	64,269	78.9	11,816	14.5	0	-
Sabah	166,108	63.9	68,978	26.5	908	0.4
Sarawak	103,858	56.9	40,668	22.3	696	0.4
KL	48,412	60.9	23,222	29.2	0	-
Labuan	25,134	61.9	7,768	19.1	323	0.8
Peninsular Malaysia	986,365	67.9	361,544	24.9	3,360	0.2
Household income						
Less than RM400	117,869	63.4	43,830	23.6	348	0.2
RM400 - RM699	201,148	66.8	63,547	21.1	1,818	0.6
RM700 - RM999	157,476	67.1	55,037	23.4	426	0.2
RM1000 - RM1999	343,008	69.2	116,043	23.4	1,546	0.3
RM2000 - RM2999	186,768	65.5	75,434	26.4	425	0.2
RM3000 - RM3999	84,739	63.6	37,095	27.8	0	-
RM4000 - RM4999	46,820	64.7	21,108	29.2	434	0.6
RM5000 & above	98,642	63.1	48,631	31.1	0	-
Occupation						
Senior Official & Manager	10,608	62.8	3,781	22.4	0	-
Professionals	40,690	66.5	17,182	28.1	0	-
Technical & Associate	62,402	71.5	22,121	25.4	290	0.3
Clerical Workers	36,601	64.9	14,288	25.3	0	-
Service Workers & Shop	134,999	66.8	53,335	26.4	290	0.1
Skilled Agricultural & Fishery	61,836	66.1	24,205	25.9	0	-
Craft & Related Trade						
Workers	44,458	71.6	12,038	19.4	0	-
Plant & Machine Operator &						
Assembler	53,764	71.9	16,285	21.8	0	-
Elementary Occupations	39,608	72.0	10,591	19.2	400	0.7
Housewife	153,387	64.1	59,781	25.0	2,055	0.9
Unemployed	106,461	67.0	31,808	20.0	761	0.5

Table 10: Reasons for not seeking care for recent illness (continue)

Reasons for not seeking care	Perceived necessity for treatment		Accessibility	
	Estimated population	%	Estimated population	%
	MALAYSIA	84,709	4.4	46,010
Sex				
Male	41,362	4.3	17,867	1.9
Female	43,347	4.4	28,142	2.9
Strata				
Urban	49,248	4.3	17,812	1.6
Rural	35,461	4.5	28,197	3.6
Ethnicity				
Malays	45,057	3.8	25,514	2.2
Chinese	14,948	5.4	3,571	1.3
Indian	4,915	3.4	2,061	1.4
Other bumis	18,881	7.5	11,523	4.6
Others	908	1.2	3,340	4.4
Education level				
None	6,587	5.4	8,131	6.6
Primary	28,055	4.0	19,339	2.8
Secondary	37,012	4.8	8,601	1.1
Tertiary	1,990	1.8	2,052	1.9
Citizenship				
Malaysian	82,786	4.4	41,246	2.2
Non-Malaysian	1,923	2.6	4,763	6.5
Age				
0-4	7,147	4.5	5,047	3.2
5-9	8,052	4.7	4,402	2.6
10-14	12,529	4.7	8,167	3.1
15-19	17,907	5.9	4,427	1.5
20-24	6,280	3.5	3,911	2.2
25-29	3,681	2.8	1,866	1.4
30-34	3,499	3.1	2,039	1.8
35-39	5,684	5.3	434	0.4
40-44	3,803	3.8	1,073	1.1
45-49	4,054	4.2	3,159	3.2
50-54	2,802	3.2	2,512	2.9
55-59	2,968	4.4	1,239	1.9
60-64	2,729	5.7	1,736	3.6
65-69	988	2.4	1,380	3.4
70-74	0	-	2,414	8.1
75-79	2,152	13.8	640	4.1
Above 80	434	3.3	1,563	11.8
Marital status				
Not married	32,831	4.9	11,242	1.7
Married	29,523	4.1	17,392	2.4
Divorcee	794	4.0	1,442	7.2
Widow/Widower	1,411	2.3	2,642	4.3

Table 10: Reasons for not seeking care for recent illness (continue)

Reasons for not seeking care	Perceived necessity for treatment		Accessibility	
	Estimated population	%	Estimated population	%
State				
Johor	9,958	5.8	2,799	1.6
Kedah	6,417	3.4	5,682	3.0
Kelantan	2,610	1.9	3,900	2.9
Melaka	1,024	1.7	758	1.3
N.Sembilan	2,776	2.5	1,900	1.7
Pahang	2,410	2.6	1,559	1.7
Pulau Pinang	305	0.5	979	1.5
Perak	6,397	6.2	2,477	2.4
Perlis	0	-	0	-
Selangor	9,981	2.8	4,197	1.2
Terengganu	2,054	2.5	1,530	1.9
Sabah	8,707	3.4	9,631	3.7
Sarawak	23,181	12.7	8,842	4.8
KL	5,904	7.4	787	1.0
Labuan	2,985	7.3	969	2.4
Peninsular Malaysia	49,836	3.4	26,567	1.8
Household income				
Less than RM400	9,656	5.2	10,312	5.5
RM400 - RM699	11,155	3.7	14,300	4.8
RM700 - RM999	11,514	4.9	5,452	2.3
RM1000 - RM1999	18,663	3.8	7,154	1.4
RM2000 - RM2999	14,920	5.2	4,030	1.4
RM3000 - RM3999	8,260	6.2	1,142	0.9
RM4000 - RM4999	2,850	3.9	392	0.5
RM5000 & above	4,924	3.2	726	0.5
Occupation				
Senior Official & Manager	1,228	7.3	434	2.6
Professionals	1,874	3.1	324	0.5
Technical & Associate	1,448	1.7	361	0.4
Clerical Workers	3,851	6.8	465	0.8
Service Workers & Shop	5,393	2.7	3,731	1.9
Skilled Agricultural & Fishery	4,178	4.5	2,385	2.6
Craft & Related Trade Workers	2,511	4.0	2,044	3.3
Plant & Machine Operator & Assembler	2,894	3.9	771	1.0
Elementary Occupations	2,259	4.1	966	1.8
Housewife	8,808	3.7	9,716	4.1
Unemployed	11,040	6.9	5,668	3.6

Table 10: Reasons for not seeking care for recent illness (continue)

Reasons for not seeking care	Perceived quality of care		Psychological barrier		Others	
	Estimated population	%	Estimated population	%	Estimated population	%
	MALAYSIA	18,245	0.9	15,259	0.8	5,799
Sex						
Male	8,150	0.9	6,045	0.6	3,330	0.4
Female	10,095	1.0	9,213	0.9	2,469	0.3
Strata						
Urban	10,852	0.9	8,777	0.8	3,513	0.3
Rural	7,393	0.9	6,481	0.8	2,287	0.3
Ethnicity						
Malays	9,223	0.8	7,886	0.7	3,651	0.3
Chinese	2,736	1.0	1,758	0.6	446	0.2
Indian	1,516	1.0	2,339	1.6	0	-
Other bumis	3,397	1.4	2,628	1.0	1,409	0.6
Others	1,372	1.8	646	0.9	292	0.4
Education level						
None	1,072	0.9	1,641	1.3	981	0.8
Primary	6,511	0.9	6,292	0.9	2,606	0.4
Secondary	7,108	0.9	6,233	0.8	735	0.1
Tertiary	717	0.7	0	-	446	0.4
Citizenship						
Malaysian	16,762	0.9	14,320	0.8	5,799	0.3
Non-Malaysian	1,483	2.0	938	1.3	0	-
Age						
0-4	2,166	1.4	1,091	0.7	1,031	0.7
5-9	1,157	0.7	1,007	0.6	1,041	0.6
10-14	2,143	0.8	3,399	1.3	446	0.2
15-19	4,408	1.5	3,079	1.0	335	0.1
20-24	615	0.3	2,359	1.3	0	-
25-29	963	0.7	757	0.6	0	-
30-34	2,341	2.1	760	0.7	292	0.3
35-39	434	0.4	724	0.7	446	0.4
40-44	582	0.6	324	0.3	446	0.4
45-49	1,629	1.7	394	0.4	335	0.3
50-54	400	0.5	718	0.8	703	0.8
55-59	0	-	0	-	400	0.6
60-64	1,050	2.2	0	-	0	-
65-69	0	-	647	1.6	0	-
70-74	354	1.2	0	-	323	1.1
75-79	0	-	0	-	0	-
Above 80	0	-	0	-	0	-
Marital status						
Not married	6,387	0.9	8,139	1.2	627	0.1
Married	5,674	0.8	3,896	0.5	2,275	0.3
Divorcee	713	3.6	324	1.6	0	-
Widow/Widower	726	1.2	0	-	379	0.6

Table 10: Reasons for not seeking care for recent illness (continue)

Reasons for not seeking care	Perceived quality of care		Psychological barrier		Others	
	Estimated population	%	Estimated population	%	Estimated population	%
State						
Johor	973	0.6	1,075	0.6	750	0.4
Kedah	3,340	1.8	2,808	1.5	1,069	0.6
Kelantan	0	-	1,320	1.0	0	-
Melaka	491	0.8	0	-	0	-
N.Sembilan	332	0.3	392	0.4	0	-
Pahang	779	0.8	1,205	1.3	0	-
Pulau Pinang	370	0.6	370	0.6	0	-
Perak	931	0.9	1,396	1.4	361	0.4
Perlis	0	-	0	-	0	-
Selangor	2,025	0.6	2,025	0.6	0	-
Terengganu	1,370	1.7	0	-	379	0.5
Sabah	2,784	1.1	1,815	0.7	938	0.4
Sarawak	2,186	1.2	1,490	0.8	1,687	0.9
KL	787	1.0	394	0.5	0	-
Labuan	1,877	4.6	969	2.4	615	1.5
Peninsular Malaysia	11,398	0.8	10,984	0.8	2,559	0.2
Household income						
Less than RM400	1,074	0.6	2,596	1.4	335	0.2
RM400 - RM699	2,972	1.0	4,870	1.6	1,207	0.4
RM700 - RM999	1,710	0.7	2,596	1.1	615	0.3
RM1000 - RM1999	5,896	1.2	2,856	0.6	658	0.1
RM2000 - RM2999	2,331	0.8	1,113	0.4	292	0.1
RM3000 - RM3999	800	0.6	1,228	0.9	0	-
RM4000 - RM4999	773	1.1	0	-	0	-
RM5000 & above	2,018	1.3	0	-	1,318	0.8
Occupation						
Senior Official & Manager	0	-	394	2.3	446	2.6
Professionals	717	1.2	0	-	400	0.7
Technical & Associate	640	0.7	0	-	0	-
Clerical Workers	0	-	1,185	2.1	0	-
Service Workers & Shop	2,598	1.3	323	0.2	1,484	0.7
Skilled Agricultural & Fishery	290	0.3	615	0.7	0	-
Craft & Related Trade						
Workers	335	0.5	725	1.2	0	-
Plant & Machine Operator & Assembler	615	0.8	434	0.6	0	-
Elementary Occupations	919	1.7	0	-	292	0.5
Housewife	2,213	0.9	2,856	1.2	658	0.3
Unemployed	758	0.5	2,498	1.6	0	-

Table 11: Prevalence of ambulance usage in last 12 months

	n	Estimated population	Prevalence of ambulance used		
			%	95% CI	
				Lower	Upper
MALAYSIA	806	297,037	2.5	2.3	2.8
Strata					
Urban	406	167,505	2.0	1.8	2.2
Rural	400	129,531	2.9	2.6	3.3
State					
Johor	127	47,702	3.6	2.7	4.5
Kedah	92	32,950	3.6	2.8	4.4
Kelantan	56	18,534	2.9	2.0	3.8
Melaka	33	12,392	4.1	2.6	5.7
N.Sembilan	53	19,278	4.1	2.7	5.6
Pahang	67	25,574	3.7	2.8	4.7
Pulau Pinang	38	13,264	2.0	1.2	2.8
Perak	63	25,751	2.6	1.9	3.4
Perlis	8	3,001	2.4	1.0	3.8
Selangor	119	46,448	2.3	1.8	2.8
Terengganu	65	21,855	4.9	3.4	6.3
Sabah	29	8,907	0.7	0.4	1.0
Sarawak	21	8,191	0.7	0.4	1.1
KL	28	11,021	1.5	0.9	2.0
Labuan	7	2,169	1.3	0.4	2.2

CHAPTER II

CATARACT SURGERY

1. INTRODUCTION

Cataract is the major cause of blindness in Malaysia. Results from the National Eye Survey, part of the NHMS II in 1996 showed that cataract accounted for 39.1% of blindness and 35.9% of low vision. The age adjusted prevalence of visual impairment due to cataract was 1 %. It was 0.2% at age 40-49, 1.3% at age 50-59, 8.2% at age 60-69, and 25.5% at age more than 70 years. An estimate of 187,845 people had visually impaired cataract in 1996 (Zainal et al. 2002).

2. LITERATURE REVIEW

Visual impairment due to cataract is reversible with cataract surgery. Based on the annual MOH Ophthalmology service census, the number of cataract surgery performed at MOH hospitals increases over the years, with 14,316 in 2002, 16,498 in 2003, 18,884 in 2004, 19,100 in 2005 and 21,381 in 2006. Cataract surgery accounted up to 85% of all ocular surgery performed (MOH Annual Ophthalmology Service Census 2002-2005). This is also a global observation (Keeffe & Taylor 1996; Stunevi et al 1995). Evidently, cataract surgery rate (CSR), as defined by World Health Organization (WHO) as number of cataract surgery performed per million populations per year, can be used as proxy indicator to measure impact and community accessibility to eye health care services in a country (World Health Organization 1997). The estimate of CSR can be gathered from the total number of cataract surgery performed by both public and private eye care facilities in a country. As it is difficult to gather the number of cataract surgery performed from the private health care facilities, the data is obtained from the population based survey in NHMS III.

3. OBJECTIVES

3.1 General Objective

- 3.1.1 To determine cataract surgery rate (CSR) which is cataract surgery performed per million populations per year for 1996 to 2005 in Malaysia

3.2 Specific Objectives

- 3.2.1 To study the trend of cataract surgery rate (CSR) in Malaysia over the 10 years period.
- 3.2.2 To determine the demographic characteristics of people who had cataract surgery.
- 3.2.3 To estimate the proportion of cataract surgery performed by university and private health care facilities

4. METHODOLOGY

Details description of methodology was described in Chapter I. Specific methodology of cataract surgery as shown below.

4.1 Cataract

Respondents of all age groups were asked the following questions;

- 4.1.1** Have you had cataract surgery before? (Respondents were showed two coloured photograph, one that of an eye with cataract and one with an eye pterygium, as a comparison. These two photographs were shown as there is often confusion in the term used in the community for both cataract and pterygium, as "selaput mata").
- 4.1.2** If they responded yes to the above, they were then asked" which year did you have the surgery?". The answer pertaining to surgery in one or both eyes.

The number of cataract surgery performed for the year in the survey is then projected to the whole population in Malaysia and that estimates become the numerators for the calculation of CSR. The denominators are the total populations in millions for the corresponding year (Department of Statistics 1999; Department of Statistics 2000-2005).

The formula of CSR is;

Number of cataract surgery performed in a year / Total populations (in millions) for the corresponding year.

5. FINDINGS

5.1 Cataract Surgery

Of the 56,710 respondents, 54,893 answered the survey question on cataract surgery. The response rate is 96.8%. Out of those who responded, 634 (1.2%) reported to have had cataract surgery. Among these 634 who have had cataract surgery, 271 (42.7%) had in both eyes.

Table 5.1 shows the estimated number of cataract surgery for the year 1996 to 2005 and the CSR per million populations for the respective year. In view of the wide 95% confidence interval, the data were merged for 5 year intervals (Table 5.2). The CSR was estimated to be 636 per million population for 1996 to 2000, and 1288.6 per million populations for 2001 to 2005.

Demography of respondents who have had cataract surgery is shown in Appendix : Table 1. As a whole, the proportion of people who had cataract surgery was significantly higher in the older than 60 age group. The proportion was also significantly higher among the urban folks.

A gross estimate of proportion of cataract surgery performed at university and private health care facilities were derived from the findings in NHMS and MOH annual ophthalmology service census. Based on Table 5.3, in recent years, more cataract surgeries are performed at MOH hospitals compared to university and private health care facilities.

Table 5.1: Estimated number of cataract surgery performed and CSR, Malaysian

Year	No. of cataract surgery (n)	Estimated number of cataract surgery (N) (95%CI)	Estimated population* (million)	Cataract surgery rate per million population (N/estimated population)
1996	56	21,608 (19,552 - 24,197)	19.7	1,095
1997	8	3,190 (1,933 - 4,445)	21.7	147
1998	31	12,087 (10,338 - 13,837)	22.1	547
1999	27	10,467 (8,601 - 12,333)	22.9	457
2000	59	222,323 (19,804 - 24,842)	23.5	950
2001	55	21,031 (18,276 - 23,787)	24.0	876
2002	70	27,700 (24,891 - 30,509)	24.5	1,129
2003	98	37,895 (34,289 - 41,501)	25.1	1,512
2004	95	36,573 (36,378 - 42,768)	25.6	1,430
2005	86	32,876 (32,568 - 37,941)	26.1	1,258

* Department of Statistics 1999; Department of Statistics 2000-2005

Table 5.2: Cataract surgery rate estimates in 5 year-band, Malaysia 1996-2005

	Number. of surgery for 5 years (n)	Estimated number of surgery for 5 years (N) (95%CI)	Estimated population at mid year (million)	CSR per million population per year
1996 - 2000	181	6,9943 (64,608 - 75,277)	22.1 (year=1998)	636
2001 - 2005	364	161,456 (151,688 - 171,225)	25.1 (year=2003)	1288.6

Table 5.3: Estimated number and proportion of cataract surgery performed at university and private health care facilities using the NHMS III findings and annual census MOH, Malaysia 2002-2005

Year	Estimated number of cataract surgery performed (NHMS III)	Number and proportion of cataract surgery performed at MOH hospitals (Annual MOH Ophthalmology census)		Estimated number and proportion of cataract surgery performed at university and private health care facilities *	
		No.	%	No.	%
2002	27,700	14,316	51.7	13,384	48.3
2003	37,895	16,498	43.5	21,397	56.5
2004	36,573	18,884	51.6	17,689	48.4
2005	32,876	19,100	58.1	13,776	41.9

*Derive from the difference between NHMS and MOH Annual Census

6. DISCUSSION

We advice caution in interpreting the survey estimates on the number of cataract surgery performed. Firstly, the sample size used in NHMS III was calculated based on major disease prevalence and may be too small to estimate prevalence of cataract surgery in the country. Secondly, the sample is based on all age groups while cataract surgery more commonly occurs among older age groups. Thirdly, there may be recall bias on self reporting cataract surgery.

Despite the limitations, there is useful information gathered in the survey. The findings showed that CSR in Malaysia is disturbingly low when reference is made to the target CSR of 3,500, set by the WHO for established market economics for the year 2000 (Pararajasegaram 1999; Taylor 2000). This low CSR supports the estimates from National Eye Survey (NES 1996) that shows a high backlog of 187,845 people who were visually impaired from cataract and have not had cataract surgery (Zainal et al. 2002). The magnitude of the problem is enhanced by addition of new cataract patients added to the accumulated backlog due to increasing aging population.

The data does show a slowly increasing trend of CSR over the years from 1996 to 2005. The observed higher number of cataract surgery in the year 1996 may be due to the conduct of NHMS II when participants who had cataract were identified and then referred to health care professionals for cataract surgery.

7. CONCLUSION

The low CSR as found in the survey sends a signal that concerted effort from all relevant stakeholders is needed to identify barriers in accessing and providing cataract surgery services. Strategies to increase the number of cataract surgery performed is needed to confront the problem of cataract

surgical backlog, long waiting time for cataract surgery and increasing number of senior citizen who are blind from cataract.

8. RECOMMENDATIONS

- 8.1 To draw out an action plan to address the issue of low CSR and cataract backlog
- 8.2 To identify steps to increase CSR and reduce cataract surgical backlog
- 8.3 To conduct situation analysis on cataract surgery service at MOH
- 8.4 To monitor number of cataract surgery performed at MOH hospitals through the existing cataract surgery registry
- 8.5 To assess consumers' utilization of cataract surgical service
- 8.6 To identify and overcome barriers in the utilization of cataract surgical services.
- 8.7 To enhance health education aims to create awareness on the need of cataract surgery among public and health care providers

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APPENDIX



APPENDIX

Table 1: Socio-demographic characteristics of people who had cataract surgery

	1996		1997	
	n	Percentage	n	Percentage
Overall	N=21,608	100.0	N=3,190	100.0
Age				
0-39	794	3.7	868	27.2
40-59	2,918	13.5	1,430	44.8
60-79	14,885	68.9	891	27.9
80+	3,009	13.9	0	-
Ethnic				
Malays	9,748	36.3	9,951	90.4
Chinese	12,594	46.9	761	6.9
Indian	3,718	13.9	0	-
Others bumis	769	2.9	292	2.7
Others	0	-	0	-
Gender				
Male	9,097	16.1	1,964	61.6
Female	47,307	83.9	1,226	38.4
Marital status				
Not married	1,625	7.5	0	-
Married	11,885	55.0	2,764	86.6
Divorcee	794	3.7	0	-
Widow/Widower	6,910	32.0	426	13.4
Not applicable	394	1.8	0	-
Unclassified	0	-	0	-
Education level				
None	9,553	44.2	891	27.9
Primary	7,834	36.3	673	21.1
Secondary	3,826	17.7	758	23.8
Tertiary	0	0.0	868	27.2
Not applicable	394	1.8	0	-
Non Classified	0	-	0	-
Monthly income				
Less than RM400	3,602	16.7	0	-
RM400 - RM699	2,853	13.2	758	23.8
RM700 - RM999	3,023	14.0	0	-
RM1000 - RM1999	3,458	16.0	764	23.9
RM2000 - RM2999	1,524	7.1	800	25.1
RM3000 - RM3999	0	-	868	27.2
RM4000 - RM4999	2,845	13.2	0	-
RM5000 & above	1,883	8.7	0	-
Unclassified	2,422	11.2	0	-

**Table 1: Socio-demographic characteristics of people who had cataract surgery
(continue)**

	1996		1997	
	n	Percentage	n	Percentage
Occupation				
Senior Official & Manager	434	2.0	0	-
Professionals	446	2.1	0	-
Technical & Associate	1,493	6.9	0	-
Clerical Workers	370	1.7	868	27.2
Service Workers & Shop	1,998	9.2	758	23.8
Skilled Agricultural & Fishery	292	1.4	0	-
Craft & Related Trade Workers	0	-	0	-
Plant & Machine Operator & Assembler	757	3.5	0	-
Elementary Occupations	740	3.4	0	-
Housewife	5,064	23.4	800	25.1
Unemployed	9,229	42.7	426	13.4
Unclassified	392	1.8	338	10.6
Strata				
Urban	60,448	93.1	10,039	91.2
Rural	4,488	6.9	965	8.8
State				
Johor	972	4.5	426	13.4
Kedah	2,539	11.8	335	10.5
Kelantan	323	1.5	0	-
Malacca	0	-	0	-
N.Sembilan	1,116	5.2	0	-
Pahang	425	2.0	0	-
Penang	3,326	15.4	0	-
Perak	1,756	8.1	931	29.2
Perlis	0	-	338	10.6
Selangor	6,510	30.1	868	27.2
Terengganu	0	-	0	-
Sabah	938	4.3	292	9.2
Sarawak	1,338	6.2	0	-
W.P Kuala Lumpur	2,361	10.9	0	-
W.P Labuan	0	-	0	-

Table 1: Socio-demographic characteristics of people who had cataract surgery (continue)

	1998		1999	
	n	Percentage	n	Percentage
Overall	11,766	100.0	10,467	100.0
Age				
0-39	0	-	0	-
40-59	3,972	31.4	4,110	39.3
60-79	6,836	53.9	5,594	53.4
80+	1,857	14.7	762	7.3
Ethnic				
Malays	11,564	59.1	2,949	28.2
Chinese	3,326	17.0	4,978	47.6
Indian	3,323	16.9	1,840	17.6
Others bumis	1,367	6.9	434	4.1
Others	0	-	266	2.5
Gender				
Male	3,326	8.3	4,143	39.6
Female	36,522	91.7	6,323	60.4
Marital status				
Not married	348	3.0	0	-
Married	8,194	69.6	6,714	64.1
Divorcee	0	-	708	6.8
Widow/Widower	3,224	27.4	3,046	29.1
Not applicable	0	-	0	-
Unclassified	0	-	0	-
Education level				
None	3,979	33.8	4,051	38.7
Primary	4,541	38.6	4,119	39.4
Secondary	3,244	27.6	2,295	21.9
Tertiary	0	-	0	-
Not applicable	0	-	0	-
Non Classified	0	-	0	-
Monthly income				
Less than RM400	1,451	12.3	1,572	15.0
RM400 - RM699	2,297	19.5	2,968	28.4
RM700 - RM999	692	5.9	394	3.8
RM1000 - RM1999	2,328	19.8	949	9.1
RM2000 - RM2999	1,934	16.4	1,717	16.4
RM3000 - RM3999	434	3.7	1,126	10.8
RM4000 - RM4999	434	3.7	0	-
RM5000 & above	532	4.5	757	7.2
Unclassified	1,662	14.1	982	9.4

**Table 1: Socio-demographic characteristics of people who had cataract surgery
(continue)**

	1998		1999	
	n	Percentage	n	Percentage
Occupation				
Senior Official & Manager	0	-	0	-
Professionals	850	7.2	0	-
Technical & Associate	392	3.3	948	9.1
Clerical Workers	0	-	827	7.9
Service Workers & Shop	2,038	17.3	0	-
Skilled Agricultural & Fishery	671	5.7	1,058	10.1
Craft & Related Trade Workers	361	3.1	0	-
Plant & Machine Operator & Assembler	348	3.0	0	-
Elementary Occupations	0	-	0	-
Housewife	3,764	32.0	3,174	30.3
Unemployed	3,341	28.4	4,457	42.6
Unclassified	0	-	0	-
Strata				
Urban	7,488	63.6	7,735	73.9
Rural	4,276	36.3	2,733	26.1
State				
Johor	0	-	426	4.1
Kedah	1,404	11.9	1,069	10.2
Kelantan	323	2.7	323	3.1
Malacca	532	4.5	2,990	28.6
N.Sembilan	392	3.3	392	3.7
Pahang	850	7.2	0	-
Penang	1,413	12.0	739	7.1
Perak	1,652	14.0	0	-
Perlis	0	-	338	3.2
Selangor	3,038	25.8	3,473	33.2
Terengganu	0	-	0	-
Sabah	323	2.7	323	3.1
Sarawak	1,838	15.6	0	-
W.P Kuala Lumpur	0	-	394	3.8
W.P Labuan	0	-	0	-

**Table 1: Socio-demographic characteristics of people who had cataract surgery
(continue)**

	2000		2001	
	n	Percentage	n	Percentage
Overall	22,323	100.0	21,033	100.0
Age				
0-39	1,027	4.6	1,008	4.8
40-59	3,601	16.1	5,842	27.8
60-79	14,786	66.2	12,980	61.7
80+	2,909	13.0	1,203	5.7
Ethnic				
Malays	7,476	33.5	9,365	44.5
Chinese	8,825	39.5	5,141	24.4
Indian	4,009	18.0	3,815	18.1
Others bumis	1,547	6.9	1,584	7.5
Others	465	2.1	1,126	5.4
Gender				
Male	8,225	36.8	10,941	52.0
Female	14,098	63.2	10,090	48.0
Marital status				
Not married	335	1.5	782	3.7
Married	15,988	71.6	11,596	55.1
Divorcee	2,530	11.3	1,985	9.4
Widow/Widower	3,471	15.5	5,944	28.3
Not applicable	0	-	290	1.4
Unclassified	0	-	434	2.1
Education level				
None	10,072	45.1	6,460	30.7
Primary	8,445	37.8	8,694	41.3
Secondary	3,406	15.3	4,849	23.1
Tertiary	400	1.8	740	3.5
Not applicable	0	-	290	1.4
Non Classified	0	-	0	-
Monthly income				
Less than RM400	3,626	16.2	3,912	18.6
RM400 - RM699	3,397	15.2	4,006	19.0
RM700 - RM999	2,008	9.0	1,486	7.1
RM1000 - RM1999	6,077	27.2	5,704	27.1
RM2000 - RM2999	2,625	11.8	3,408	16.2
RM3000 - RM3999	2,290	10.3	636	3.0
RM4000 - RM4999	1,152	5.2	1,076	5.1
RM5000 & above	715	3.2	434	2.1
Unclassified	434	1.9	370	1.8

**Table 1: Socio-demographic characteristics of people who had cataract surgery
(continue)**

	2000		2001	
	n	Percentage	n	Percentage
Occupation				
Senior Official & Manager	434	1.9	768	3.7
Professionals	794	3.6	394	1.9
Technical & Associate	0	-	2,307	11.0
Clerical Workers	786	3.5	0	-
Service Workers & Shop	976	4.4	1,907	9.1
Skilled Agricultural & Fishery	1,413	6.3	652	3.1
Craft & Related Trade Workers	0	-	0	-
Plant & Machine Operator & Assembler	0	-	646	3.1
Elementary Occupations	434	1.9	0	-
Housewife	6,575	29.5	3,977	18.9
Unemployed	10,914	48.9	9,768	46.4
Unclassified	0	-	323	1.5
Strata				
Urban	15,583	69.8	14,519	69.0
Rural	6,742	30.2	6,513	31.0
State				
Johor	3,122	14.0	0	-
Kedah	1,739	7.8	1,739	8.3
Kelantan	323	1.4	969	4.6
Malacca	266	1.2	2,006	9.5
N.Sembilan	1,176	5.3	1,900	9.0
Pahang	1,275	5.7	779	3.7
Penang	2,893	13.0	2,523	12.0
Perak	3,047	13.6	3,047	14.5
Perlis	872	3.9	338	1.6
Selangor	2,603	11.7	4,485	21.3
Terengganu	0	-	0	-
Sabah	1,169	5.2	0	-
Sarawak	1,686	7.6	1,490	7.1
W.P Kuala Lumpur	1,181	5.3	787	3.7
W.P Labuan	969	4.3	969	4.6

**Table 1: Socio-demographic characteristics of people who had cataract surgery
(continue)**

	2002		2003	
	n	Percentage	n	Percentage
Overall	26,462	100.0	37,611	100.0
Age				
0-39	434	1.6	0	-
40-59	8,802	33.3	10,418	27.7
60-79	14,261	53.9	25,910	68.9
80+	2,965	11.2	1,285	3.4
Ethnic				
Malays	13,106	49.5	16,794	44.7
Chinese	10,066	38.0	12,671	33.7
Indian	1,922	7.3	4,352	11.6
Others bumis	1,368	5.2	2,591	6.9
Others	0	-	1,203	3.2
Gender				
Male	15,609	59.0	17,618	46.8
Female	10,853	41.0	19,993	53.2
Marital status				
Not married	1,300	4.9	0	-
Married	18,123	68.5	29,800	79.2
Divorcee	426	1.6	2,016	5.4
Widow/Widower	6,179	23.4	5,797	15.4
Not applicable	0	-	0	-
Unclassified	434	1.6	0	-
Education level				
None	7,267	27.5	8,199	21.8
Primary	11,802	44.6	18,932	50.3
Secondary	5,200	19.7	8,534	22.7
Tertiary	2,194	8.3	1,948	5.2
Not applicable	0	-	0	-
Non Classified	0	-	0	-
Monthly income				
Less than RM400	2,992	11.3	3,445	9.2
RM400 - RM699	6,007	22.7	5,406	14.4
RM700 - RM999	3,376	12.8	4,770	12.7
RM1000 - RM1999	4,888	18.5	7,563	20.1
RM2000 - RM2999	3,050	11.5	6,093	16.2
RM3000 - RM3999	2,114	8.0	2,396	6.4
RM4000 - RM4999	757	2.9	868	2.3
RM5000 & above	2,944	11.1	4,410	11.7
Unclassified	335	1.3	2,661	7.1

**Table 1: Socio-demographic characteristics of people who had cataract surgery
(continue)**

	2002		2003	
	n	Percentage	n	Percentage
Occupation				
Senior Official & Manager	0	-	335	0.9
Professionals	1,568	5.9	1,960	5.2
Technical & Associate	1,875	7.1	3,691	9.8
Clerical Workers	1,758	6.6	0	-
Service Workers & Shop	2,004	7.6	3,894	10.4
Skilled Agricultural & Fishery	3,523	13.3	2,309	6.1
Craft & Related Trade Workers	1,173	4.4	803	2.1
Plant & Machine Operator & Assembler	694	2.6	1,109	2.9
Elementary Occupations	0	-	862	2.3
Housewife	3,356	12.7	11,665	31.0
Unemployed	10,118	38.2	10,103	26.9
Unclassified	394	1.5	880	2.3
Strata				
Urban	18,294	69.1	25,783	68.6
Rural	8,168	30.9	11,829	31.5
State				
Johor	1,399	5.3	1,927	5.1
Kedah	3,274	12.4	4,278	11.4
Kelantan	997	3.8	1,320	3.5
Malacca	2,007	7.6	758	2.0
N.Sembilan	724	2.7	2,956	7.9
Pahang	354	1.3	425	1.1
Penang	4,067	15.4	2,522	6.7
Perak	3,664	13.8	3,664	9.7
Perlis	775	2.9	1,211	3.2
Selangor	4,339	16.4	9,979	26.5
Terengganu	0	-	1,676	4.5
Sabah	1,554	5.9	1,554	4.1
Sarawak	1,686	6.4	3,970	10.6
W.P Kuala Lumpur	394	1.5	787	2.1
W.P Labuan	1,230	4.6	584	1.6

**Table 1: Socio-demographic characteristics of people who had cataract surgery
(continue)**

	2004		2005	
	n	Percentage	n	Percentage
Overall	36,565	100.0	32,876	100.0
Age				
0-39	930	2.5	2,185	6.6
40-59	9,916	27.1	9,304	28.3
60-79	23,273	63.6	18,694	56.9
80+	2,446	6.7	2,696	8.2
Ethnic				
Malays	15,341	42.0	11,541	35.1
Chinese	16,021	43.8	13,647	41.5
Indian	4,563	12.5	6,639	20.2
Others bumis	640	1.8	615	1.9
Others	0	-	434	1.3
Gender				
Male	18,131	49.6	12,329	37.5
Female	18,435	50.4	20,549	62.5
Marital status				
Not married	1,227	3.4	782	2.4
Married	25,290	69.2	23,913	72.7
Divorcee	1,082	3.0	860	2.6
Widow/Widower	8,037	22.0	7,321	22.3
Not applicable	930	2.5	0	-
Unclassified	0	-	0	-
Education level				
None	11,003	30.1	8,508	25.9
Primary	11,881	32.5	12,806	39.0
Secondary	10,247	28.0	10,054	30.6
Tertiary	2,501	6.8	1,176	3.6
Not applicable	930	2.5	0	-
Non Classified	0	-	335	1.0
Monthly income				
Less than RM400	5,194	14.2	3,506	10.7
RM400 - RM699	5,234	14.3	2,871	8.7
RM700 - RM999	6,273	17.2	5,873	17.9
RM1000 - RM1999	5,951	16.3	7,758	23.6
RM2000 - RM2999	6,340	17.3	5,176	15.7
RM3000 - RM3999	3,677	10.1	2,767	8.4
RM4000 - RM4999	0	-	694	2.1
RM5000 & above	1,932	5.3	2,541	7.7
Unclassified	1,966	5.4	1,691	5.1

**Table 1: Socio-demographic characteristics of people who had cataract surgery
(continue)**

	2004		2005	
	n	Percentage	n	Percentage
Occupation				
Senior Official & Manager	1,080	3.0	646	2.0
Professionals	591	1.6	951	2.9
Technical & Associate	6,057	16.6	2,852	8.7
Clerical Workers	400	1.1	1,302	4.0
Service Workers & Shop	2,693	7.4	1,520	4.6
Skilled Agricultural & Fishery	1,965	5.4	1,731	5.3
Craft & Related Trade Workers	0	-	370	1.1
Plant & Machine Operator & Assembler	667	1.8	748	2.3
Elementary Occupations	1,104	3.0	305	0.9
Housewife	9,226	25.2	12,975	39.5
Unemployed	11,528	31.5	8,823	26.8
Unclassified	324	0.9	656	2.0
Strata				
Urban	24,921	68.2	22,582	68.7
Rural	11,642	31.8	10,296	31.3
State				
Johor	9,431	25.8	5,030	15.3
Kedah	5,348	14.6	3,943	12.0
Kelantan	1,672	4.6	997	3.0
Malacca	2,990	8.2	983	3.0
N.Sembilan	1,448	4.0	2,052	6.2
Pahang	354	1.0	779	2.4
Penang	2,153	5.9	3,631	11.0
Perak	4,084	11.2	2,839	8.6
Perlis	0	-	338	1.0
Selangor	5,353	14.6	8,244	25.1
Terengganu	0	-	306	0.9
Sabah	1,261	3.4	1,554	4.7
Sarawak	1,686	4.6	1,142	3.5
W.P Kuala Lumpur	788	2.2	394	1.2
W.P Labuan	0	-	646	2.0