MALDIVES HEALTH RESEARCH BULLETIN

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if you wish to contribute to future volumes.
please contact
Health Information and Research Unit of Planning and International Health of Ministry of Health
www.health.gov.mv
ppd@health.gov.mv

Published by: Health Information & Research Unit,
Planning and International Health (PIH),
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Male' Republic of Maldives.
Tel: +960 3328887
Fax: +960 3328889
Email: ppd@health.gov.mv
Website: http://www.health.gov.mv

Data Verification: Fathmath Shamah (Senior Research Officer/MOH)
Moomina Abdulla (Assitant Director/ MOH)
Athika Abdul Sattar Mohamed (Director/MOH)

Layout & Design: Ahmed Siad

Data Compilation: Fathmath Shamah (Senior Research Officer/MOH)

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FOREWORD

The Ministry of Health first published the Maldives Health Research Bulletin in the World Health Day of 2014 with the key objective of sharing information acquired through research conducted by Maldivian researchers and those related to Maldives. Other objectives of publishing a health research bulletin includes (1) to create a common platform in which health students, health researchers and those who are interested to pursue health research can gain easy access to quality health research materials relevant to Maldivian context, (2) to provide technical support to health students, health researchers and those who are interested in Maldivian health research by providing information related to existing and ongoing researches as well as by highlighting the health research priority areas.

This second volume of the Maldives Health Research Bulletin includes 10 abstracts of health research conducted in Maldives along with information about ongoing researches, the most recent health research priority list and an overview of the functions and procedures of the National Health Research Committee.

The Ministry of Health would also like to acknowledge the contributions of the Maldives Health Research Bulletin development team of the Health Information and Research Unit of Planning and International Health of Ministry of Health.

Additionally, the Ministry of Health highly appreciates and acknowledges the efforts of health researchers including those researchers who had contributed to this bulletin.

It is hoped that these researches would contribute to the development of the health sector of Maldives and would contribute to the strengthening of interventions and programs in the health sector.

Mr. Ahmed Zuhoor
Minister of Health, Maldives.

CONTENTS

ABSTRACTS

1. KNOWLEDGE, ATTITUDE AND PRACTICES OF WOMEN IN MALDIVES RELATED TO THE RISK FACTORS, PREVENTION AND EARLY DETECTION OF CERVICAL CANCER IN MALDIVES.

AUTHOR(S)/ CONTRIBUTOR(S):
Health Protection Agency in Collaboration with United Nations Population Fund (Partha Basu, Salma Hassan, Fathmath Fileeshia, Sizna Mohamed, Aminath Nahoodha, Aminath Shiuna, Asma Ibrahim Sulaiman, Nazeera Najeeb, Fathmath Jeehan Saleem)

PUBLISHED IN:
Asian Pacific Journal of Cancer Prevention.

RESEARCH DURATION:
April 2012 – June 2013

OBJECTIVES:
The target of the study was to assess the level of Knowledge, Attitude and Practices of Women in relations to risk factors of cervical cancer, early detection of the disease and its prevention.

SPECIFIC OBJECTIVES:
(1) To learn the demography relevant to the subject of study.
(2) To identify proportion of women who are aware of the symptoms of cervical cancer in general and specifically in relation to education and socio economic status.
(3) To identify women aware of risk factors for cervical cancer and particularly to learn the relationship between knowledge and demographic factors.
(4) To estimate proportion of women who knows about cervical cancer screening and vaccination and also to recognize who screened for cervical cancer with pap smear.

RATIONALE/ JUSTIFICATION:
There are no studies conducted in the Maldives in this field and the incidence of cervical cancer is unknown. Maldives is situated in South Asia, which has the highest age standardized incidence rate of cervical cancer (25/100,000 women) among all regions of the continent. It is likely that Maldives also has high cervical cancer incidence similar to neighboring countries mainly due to lack of organized screening program in the country. Cervical cancer is a public health problem in Maldives which need to be addressed. Interventions at both primary and secondary prevention are highly effective against cervical cancer. The importance of conducting this research is to create evidence based information for developing strategies to reduce morbidity and mortality related to cervical cancer.

METHODOLOGY:
This was a cross-sectional survey conducted between April 2012 and June 2013. A structured questionnaire was used for interviews, which was developed based on information and feedback received after focus group discussions held to develop the questionnaire. The questionnaire was administered after obtaining informed consent for women between 20 – 50 years old in the selected atolls from South, Central and North Region. 'Households were selected at a pre-defined interval, based on population proportionate to size' and 1 eligible woman from each household was selected by drawing lots. Expatriate women married to Maldivian are also included in the survey. A total of 2902 eligible women participated in the survey.

RESULTS/ FINDINGS:
Women are more aware of the breast cancer than cervical cancer and 35% of women reported that they are aware of cervical cancer. The number of women who identified at least one symptom of cervical cancer is 34.5% (n=986) , 20% identified common risk factors, 18.4% heard of the Pap Smear for cervical cancer screening, among which only 33.6% did the screening at least once.
Noticeably there were misconceptions and incorrect knowledge regarding cervical cancer e.g. several women thought the cervical cancer is 'infectious'. The finding also revealed that knowledge of women improved with level of education.

CONCLUSION:
The knowledge regarding cervical cancer is very limited among Maldivian women. It is important to develop strategies to create awareness and also to improve facilities for cervical cancer screening and management. High literacy rate is an advantage for Maldives as the study shows that knowledge increase with increased education.

2. HOW E-CIGARETTES SHOULD BE REGULATED IN MALDIVES.

AUTHOR(S)/ CONTRIBUTOR(S):
Fathimath Nazla Rafeeq

RESEARCH DURATION:
03 months

OBJECTIVES:
To look at available literature on the effects of e-cigarette, including effects on health and on tobacco control, examine the regulatory methods available and recommend a feasible regulatory option for Maldives.

RESEARCH QUESTION:
How should e-cigarettes be regulated in Maldives?

RATIONALE/ JUSTIFICATION:
E-cigarettes or electronic cigarettes are systems that vapourise a chemical combination which is inhaled, some containing nicotine and used mainly as a substitute for normal cigarettes. They are sometimes marketed as a 'safer' alternative. WHO has declared that e-cigarettes are not a proven tobacco cessation device and its safety has not been established. Many countries are already regulating e-cigarettes as a tobacco product or as a medical device or in a combination of ways. Given these factors and the rise in use of e-cigarettes after the ban on smoking in public places in Maldives, the national tobacco control program and the Tobacco Control Advisory Board wanted to look into what the most feasible option is for regulating e-cigarettes in Maldives..

METHODOLOGY:
Literature reviews were undertaken to examine the health effects of e-cigarettes, to see how it is marketed and also to find out ways of regulating e-cigarettes. Key informant interviews were conducted to examine how feasible the different options available for regulation are in the country, taking into account country context.

RESULTS/ FINDINGS:
Although e-cigarettes were found to contain less harmful chemicals than conventional cigarettes, long-term effects of the toxic compounds present were not available. Studies of acute effects produced varying results. Accidental exposure to cartridges was also a recognized problem. Aggressive marketing campaigns were seen to be conducted, especially on online forums, some of which were accessible to children. Regulatory options range from complete ban to regulating as medical or tobacco product, with some countries adopting mixed approaches.

IMPLICATIONS:
The best regulatory option for Maldives appeared to be regulation as a tobacco product. Other recommendations include strengthening of implementation of current regulations, increase financial and human resources for tobacco control nationally and increased advocacy for tobacco control.

CONCLUSION:
This research established that there is a need for regulation of this product, and there is a need for further strengthening implementation of the current regulations

3. DETERMINANTS OF THE INTRODUCTION OF PRELACTEAL FEEDS IN THE MALDIVES

AUTHOR(S)/ CONTRIBUTOR(S):
Raheema Abdul Raheem, Colin Binns & Hui Jun Chih, Kay Sauer

PUBLISHED IN:
Breastfeeding Medicine

RESEARCH DURATION:
14th February 2011- 28th February 2014

OBJECTIVES:
To identify the determinants of the introduction of prelacteal feeds in the Maldives.

RATIONALE/ JUSTIFICATION:
The introduction of complementary foods and/or infant formula before six months is a public health issue. In many countries the first food an infant receives is not breast milk. This is due to the introduction of prelacteal feeds based on religious, cultural, and medical factors. The Republic of Maldives has similar practices and it is essential to understand the types of prelacteal feeds and the determinants affecting introduction of prelacteal feeds.

METHODOLOGY:
A cohort of 458 mothers was recruited from antenatal clinics at two major hospitals in Malé, the Maldives. The mothers were followed up after birth at 4 weeks, 3 months, and 6 months. The child's birth, the type of infant delivery, the time breastfeeding was initiated, gender of the infants, types of prelacteal feeds, and feeding method were recorded.

RESULTS/ FINDINGS:
After birth, 4.1% of infants received infant formula from the hospitals, whereas 10.6% and 7.4% of them received honey and dates, respectively, as prelacteal ritual feeds. Factors associated with introduction of ritual feeds as prelacteal feeds included the infant being a boy (p=0.05; adjusted odds ratio [AOR]=1.78; 95% confidence interval [CI], 1.07-2.98), attitude toward prelacteal feeds (p=0.01; AOR=2.87; 95% CI, 1.48-5.58), and maternal employment (p=0.01; AOR=2.3; 95% CI, 1.4-3.9). Higher maternal age was inversely associated with introduction of ritual feeds as a prelacteal feed (p=0.05; AOR=0.5; 95% CI, 0.3-0.9). Introduction of infant formula as the prelacteal feed was positively associated with birth by cesarean section (p=0.01; AOR=4.6; 95% CI, 1.6-13.3) and inversely associated with maternal mother's feeding method being breastfeeding (p=0.05; AOR=0.15; 95% CI, 0.04-0.6). Prelacteal feeding was associated with cessation of breastfeeding before 6 months (p=0.01; AOR 6.0; 95% CI, 1.64-21.80).

CONCLUSION & IMPLICATIONS:
Health professionals need to distinguish between religious and cultural practices in order to develop appropriate health education programs to reduce the unnecessary use of early additional feeds. Understanding the barriers related to the initiation of breastfeeding after cesarean section is also important. Antenatal education programs need to include more information on the importance of exclusive breastfeeding and be better targeted at parents, maternal grandmothers and health care workers. Future research needs to identify factors associated with the increasing number of caesarean sections as well as the barriers to initiation and continuation of breastfeeding after caesarean section. Such information can be used to increase breastfeeding rates, particularly the exclusive breastfeeding rates within the first 6 months after delivery.

FULL ARTICLE AVAILABLE FROM:
http://online.liebertpub.com/doi/full/10.1089/bfm.2014.0028

4. STRUGGLE TO "FIT IN" – EXPERIENENCES ON COMMUNITY RE-INTEGRATION BY PEOPLE WHO HAVE HAD TREATMENT FOR SUBSTANCE ABUSE IN MALDIVES

AUTHOR(S)/ CONTRIBUTOR(S):
Khadeeja Shakir

RESEARCH DURATION:
1 year

OBJECTIVES:
This study was aimed to explore the experiences and struggles of people who have been treated for substance abuse as they seek to reintegrate back into the community in Maldives.
Particular interest was in identifying the meanings they make of their experiences and some of the barriers and facilitators to their reintegration and how their experiences shape their identity formation or who they understand themselves to be.

RATIONALE/ JUSTIFICATION:
I always wondered what happened to the people who had recovered from illicit substance abuse. I heard stories about like 'chasing the dragon' as referred by some to overcome their addictions. I also heard stories about how people suddenly find 'enlightenment' to give up their substance abuse life and turn over a new leaf.
However, the next day, I find out that these very people have relapsed back to their substance abuse again and again. Because of this, there exists significant stigma surrounding this category of people living in the society, often leading these people to be marginalized and as a consequence, sometimes, isolating and marginalizing their families as well.
There is rarely much focus given to the struggles faced by people post treatment for substance abuse on their course to maintaining sobriety
I thought, about doing a research on these people who are currently getting treatment for community reintegration, to find out, more about their struggles, the stigma they face, and how they seek to overcome these struggles, while in the treatment. Therefore, my rationale for this research is to give a voice to the people who are living in the period of post substance abuse and getting treatment for community reintegration.

METHODOLOGY:
Semi-structured interview with open-ended questions were used, focusing on the attitudes and experiences of these participants during their substance abuse period and after maintaining a period of drug abstinence.
The method used for analyzing the data in this study was thematic analysis, a method for identifying, analyzing and reporting themes within in rich detail

RESULTS/ FINDINGS:
Illicit substance abuse is one of the major social issues faced by Maldives. This study was aimed to explore the experiences and struggles of people who have been treated for substance abuse as they seek to reintegrate into the community in Maldives. The researcher is focused on identifying barriers and facilitators to their reintegration and how their experience shaped their identity formation or who they understand themselves to be.
Data in form of in-depth exploratory interviews with four men, who were currently in the court mandated community reintegration phase of their treatment were collected and analyzed using thematic analysis. These men were struggled to find an identity for themselves that existed outside their dominant identity of drug addict and the consequent stigmatism from the community. They struggled to hope for a better future for themselves, drawing motivation, from counselors, family and significant others. They struggled to fit in, although, held hope for themselves through religious inspiration stories and rituals and becoming aware of their spirituality and reconnecting with the sort of person they were, are and hoped to be. These men also sought for their community to understand their struggles with alcohol and drugs as an addiction and disease rather than through assumptions that they were bad and or criminals. Implications for treatment and future research are discussed.

IMPLICATIONS:
Implications for treatments for person who are seeking to address substance abuse and dependence in the Maldives, particularly in addressing a person's motivation for change. Rather than the motivation for change primarily being drawn from impending court sentences, treatment could also target as a motivation to change as related to the person connecting with a vision for live lived differently and an identity outside the 'drug addict' identity through addressing the question 'who am I if I am not a drug addict?' Strengthening alternatives identities through therapies such as narrative therapy may assist these men to see their actions in changing their drug use in terms of the sort of person they were are and hoped to be. Strengthening these alternative identities might assist these men as they reintegrate into community in which they may at times experience stigma and marginalization.
This research has also identified some gaps in the knowledge of these men related to both the effects of drug use as well as the legal system in the Maldives. Additionally, there is also a need to inform the broader community about how stigmatism and negative responses may impact these clients progress on maintaining abstinence. Furthermore, providing further training and supervision can assist health professionals who are working with these clients.

CONCLUSION:
The participants in this study were struggling to find and identity for themselves, other than their dominant identity as a 'drug addict. Although, their families had started accepting them, these men still felt stigmatism from the wider community. Their change of the pattern of drug use was related to impending court sentence. However, these men held onto hope through positive motivation from counselors, families and from significant others. However, it was also noted that they lack the awareness of the rules, regulation and legislation on drug use. They further held onto hope through religious rituals and inspirational stories by becoming more aware of their spirituality and struggling fit in by trying to remember the person they were before drug and alcohol abuse.

During this research, it was clear, that there was a struggle amongst these men to find an identity for themselves outside the version of themselves as a 'drug addict'. These men's journey of claiming preferred identities outside a drug addict identity have implications for treatment programs to address questions of identity and the significance of construction of a vision of life lived, differently in motivating change rather than motivation being primarily derived from fear of criminal sentencing. This research hoped to give a voice to these men who are in treatment for substance abuse in the Maldives, including how they were asking for a second chance to reclaim their identity and their place in their life and communities.

TO ACCESS FULL ARTICLE PLEASE EMAIL:
khadeejashakir@hotmail.com

5. ASSESSING THE FINANCIAL SUSTAINABILITY OF THE UNIVERSAL HEALTH INSURANCE SCHEME "AASANDHA" IN THE MALDIVES

AUTHOR(S)/ CONTRIBUTOR(S):
Moomina Abdullah.

RESEARCH DURATION:
March 2014 – December 2014

OBJECTIVES:
In order to achieve the aim, the study addresses the following specific objectives which includes;
• To study the government funds for "Aasandha" against cost of "Aasandha" in terms of financial sustainability.
• Assess the degree of financial sustainability of "Aasandha" using country's macroeconomic data and projections 2014-2018.
• To study the expected effect reimbursement policy on the financial sustainability of "Aasandha".

RESEARCH QUESTION(S):
To be able to achieve the objectives of this study, the following research questions need to be stated to aid in finding answers to the research problem.
• To study the government funds for "Aasandha" against cost of "Aasandha" in terms of financial sustainability.
• What is the degree of financial sustainability of Aasandha in five years' time 2014- 2018?
• What is the expected effect reimbursement policy on the financial sustainability of "Aasandha"?

RATIONALE/JUSTIFICATION:
Aasandha has many encounters to face and also many reform steps to pursue (Nagpal' S and Redaelli S, 2013).
• Cost drivers distressing the scheme includes the fee-for-service system that is known mechanism that boosts the supplier-induced demand.
• A non-existent referral system with patients directly accessing specialized care.
• Significant potential for moral hazard.
• And lack of incentives to contain costs on the part of the providers and beneficiaries are problems that the scheme encounters (Nagpal' S and Redaelli S, 2013).
It is in this light that this study finds it necessary to assess the financial sustainability of the Universal Health Insurance Scheme "Aasandha" in the Maldives. Thisstudy will attempt to assess the current health care insurance scheme 'Aasandha" and the financing sustainability of this scheme in the Republic of Maldives. The fiscal space of the government and the changes in the utilization rate after the introduction of the scheme will be taken in to consideration.

METHODOLOGY
The study will be conducted for Universal Health Insurance Scheme "AASANDHA" in the Maldives to assess the financial sustainability of the scheme.
• The study was done using the secondary data to analyze the cost in the year 2011 and 2012, before and after the introduction of the Aasandha Scheme. The data were gathered from statistical records, financial reports from the hospital and data reported in the Government of Maldives Budget Statements. Financial reports of the hospital included the income statements and the financial statements of the hospital. These reports were provided by the administrators of the hospital.
• This research study is a descriptive study using the primary data to explore the scheme focusing on the financial sustainability of the 'Aasandha Scheme' .Furthermore to study the financial sustainability of the scheme secondary data were gathered from statistical records, financial reports NSPA records, data reported in the Government of Maldives Budget Statements, Ministry of Health, and annual health sector reviews and also from projected data from IMF.

RESULTS/ FINDINGS:

This study was done to provide the insight to the financial sustainability of the Health insurance scheme Aasandha. This study will assist in developing the health insurance scheme in the future and find ways to come up with the burden when the ceiling is removed.
The total cost of the Aasandha scheme is Rf 810,810,640 for the year 2012 while it increased to Rf 814,740,394 in year 2013. This increase might be due to the high cost in the referral to abroad. The total fund available for the scheme was Rf 512889637.55 for the year 2012 and increased to Rf 517466010.92. There was an increase of more than 28% in the cost of referrals to abroad during the year 2012 to 2013. This increase might be due to lack of proper screening when the authorization is given to referrals to abroad. The study result in the projection of the financial sustainability of the scheme, the costs increases with

the increase in the population of the country. Laws need to be amended to impose a core payment to op services and the double insurance to control the cost of Aasandha.
The removal of the 100,000 ceiling will affect the total cost of the scheme and its financial sustainability. Therefore the government should seek ways to control the cost of the Aasandha scheme.

IMPLICATIONS:

- Encourage the hospital to keep proper costing records and use better allocation methods such as allocating appropriate costs to different departments and keeping consistency in the records system.
- All the staff of the hospital should be informed amount the cost information of the materials and the equipment. This will help the staff to realize the importance and the value of the materials that are imported from abroad.
- Costing studies need to be done appropriately to strengthen the costing capacity of the hospital for further decision making process and to help further improve the health insurance in the country.
- Research and studies based on cost are imporant elements to study and assess the financial sustainability of the health insurance scheme.
- Laws need to be amended to impose copayment or co insurance to control the cost containment and the moral hazards.
- Implement ways to analyze the behavior of the providers and continuous monitoring should be done.
- There should be proper accreditation authorities under the under Ministry of Health for the proper guidance and granting the quality assured accreditations.
- Systematic mechanisms should be implemented to monitor and evaluate the providers so that better quality assured services can be given to the general public. Evaluation procedures for the providers must be identified and executed and the evaluation indicators must be specified.
- Better screening methods should be implemented in the scheme to control the costs in the referrals to abroad. Qualified medical team must have a transparent screening method to control the costs of referral to abroad and to prevent switching of medical treatment.
- Capacity of the hospitals should be improved to reduce the cost of referral to abroad.
- Opening the scheme to more private service providers to increase the competition. And reduce the payment cycle to make the scheme more attractive.

CONCLUSION:

This study was conducted for 'Aasandha', the health insurance scheme in the Maldives to assess the financial sustainability of the scheme. Maldives's universal health insurance scheme "Aasandha" came in to existence after the Parliamentary Act of Social Health Insurance. Aasandha benefits are widespread; it covers services ranging to inpatient and outpatient treatment including drugs and diagnostics, though subject to certain conditions, within an overall cap of MRF 100,000 per person per year. In theory, the entire population of the country, comprising over 3, 30,000 citizens, is eligible for scheme benefits without any premium contributions
Qualitative approach of study was done to find the data on the Aasandha's administration and the key informant were interviewed to seek the needed information. Secondary data on costs and funds for the scheme from administrators (NSPA) were gathered to make a comparison for 2011 and 2012. The financial sustainability involves forecasting for the future, macroeconomic forecasts provide a mandatory stand for which the health care financing can be thoroughly assessed. For this, projections are calculated by using the macro economic data, population growth and hospital cost to have a clear foreseen for 2014-2018. The research design used in this study was descriptive research.
Furthermore, the study shows that the total cost of Aasandha for the year 2012 was Rf 810,810,640 while it increased to Rf 814,740,394 in the 2013. The funds from the government to the Aasandha for the year 2012 were Rf 512,889,638 and increased in the year 2013 to an amount of Rf 517,466,011.

TO ACCESS FULL ARTICLE PLEASE EMAIL:

mouniabdullah@gmail.com

6. MALDIVES NATIONAL HEALTH ACCOUNT 2011

AUTHOR(S)/ CONTRIBUTOR(S):
Ministry of Health in Collaboration with World Health Organization.

RESEARCH DURATION:
January 2012 – January 2013

OBJECTIVES:
The purpose of this study is to formally establish National Health Account (NHA) in Maldives. There are 5 major objectives for the "National Health Account" Project as follows:

- To establish boundaries
- To include all expenditures whose primary purpose is to restore, improve and maintain health during a defined period of time
- To set up boundaries in terms of time and space.
- To design NHA classifications schemes in a form to make compatible with those practiced internationally.
- To make cross-national comparisons possible.

RESEARCH QUESTION(S):

- Who in the country is financing health sector?
- How much do they spend and on what types of services?
- Who benefits from this health expenditure?

RATIONALE/JUSTIFICATION:
Ministry of Health (MoH) of Maldives has taken huge measures during the past couple of years to change the public perception of the health services being provided. Some of the measures taken by the Government include privatizing Government owned Regional Hospitals and Atoll Hospitals in order to improve the level of the services being provided. Though measure has been taken to improve the services provided, considerable measures have not been taken to control the level of Health expenditure. Hence as a result MoH at the moment facing problems such as high cost, change in life style, lack of accurate expenditure data, distribution of wealth and increasing budget.
The distribution of wealth crisis became more prominent after the introduction of Universal Health Insurance Scheme in January 1st, 2012. The Universal Health Insurance Scheme or in other words "Aasandha" provides all the citizens of Maldives with free medical services. The insurance scheme provides coverage up to Rf100, 000 per person. The main setbacks of this scheme are that it does not take the financial status or medical condition of the citizen into consideration when providing services. Hence as a result the distribution of wealth is not used to its full potential.
The biggest concern at the moment undoubtedly would be the lack of reliable data. Reliable data on health financing is crucial for effective health policy formulation, implementation and monitoring.
Thus to overcome these issues government has taken the establishment of National Health Account (NHA) as a top priority. The decision was made after deliberating the alternatives and the current demand. The NHA standards and international data classification can be used as base information to help improve the data on how much the entire nation is spending on Health care, what services are being delivered and who is paying for the service.
The vision of introducing NHA in Maldives is to help set national strategies for effective health financing and help raise additional funds for MoH.

METHODOLOGY:
The Maldives NHA study followed the methodology recommended in the Guide to Producing National Health Accounts (2003) prepared by WHO in collaboration with the World Bank and the United States Agency for International Development (USAID). The methodology is based on information matrices that allow four levels of analysis: (i) sources of health funds, (ii) financing agents handling funds, (iii) providers of services, and (iv) health functions. Needed adjustments were made to the classification schemes to bring them in line with the Maldives national specifications as well as preparing the team to use the new System of Health Accounts (SHA II).
Several criteria were used to adapt the classifications. The transactions were grouped so that they each represent an important, policy-relevant dimension. Partitioned transactions are mutually exclusive and exhaustive, so each transaction of interest is placed in one– and only one –category.
Efforts were made, to the extent possible, to consider existing international standards and conventions when placing certain transactions into groups to assure international comparability of Maldives data. While preparing preliminary 2011 NHA tables, the NHA team relied on existing data sources but, when essential, additional efforts were made to compile the information.

essential, additional efforts were made to compile the information.
Secondary data sources were identified and analyzed, data gaps were identified, and survey and data collection instruments developed. Surveys on NGOs, donors, private insurers, employers and providers were completed. Data on government spending from the MoFT as well as data from the Maldives Statistics Reports contributed to the finalization of the NHA report.

RESULTS/ FINDINGS:
Several key issues in health care finance are identified in the paper.
- There is little coordination among multiple public delivery systems or among public and private systems
- Methods used to pay providers of care are of critical importance for access, efficiency, and quality
- Expenditures in relation to GDP is high compared to other neighbors' countries averages (9.2 percent).
- Only 3% of Maldives' health expenditures derive from external donors; this is Low. A question you might keep in mind: why donors are not supporting health in Maldives? Why it is not exceeding 3% of THE?
- Preventive health care services and programs represent 5% & mostly funded by Donors.
- Private expenditures represent 53 percent of sector-wide expenditures.
- There is one Private Hospital in the capital city of Male and the Government of Maldives is the only providers of inpatient care in the Atolls.
- Pharmaceuticals accounted for over 17% of total health expenditures. The majority of the pharmaceuticals sold in Maldives are trade names with low rate of generics.
- Government spending doesn't exceed 44% of THE
- Universal Coverage is an important goal
- In 2005 the Member States of WHO adopted a resolution encouraging countries to move towards Universal Coverage.

CONCLUSION:
At this stage of the health sector reform, this first NHA report focuses on identifying total health expenditures, to allow the Government of Maldives to make active policy decisions based on the results. Key policy issues that arise from the NHA findings are broad and numerous, and include:

- How much should Maldives spend on health services?
- How much should the Ministry of Health spend?
- How much can the people of Maldives afford to spend?
- How can the Government recover some of its health budget?
- How might the Government realign its budget process on health and how can the NHA findings be used to formulate an equitable and sustainable health insurance scheme?
- How should the Government shape health sector financing to control any under/or overuse of curative versus preventive services?
- What should be the role of donors, and the public and private sector in Maldives?

FULL SURVEY DOCUMENT AVAILABLE FROM:
http://www.searo.who.int/maldives/documents/executivesummarynhareport.pdf

7. WHO STEPS SURVEY ON RISK FACTORS FOR NON-COMMUNICABLE DISEASES (NCD), MALDIVES 2011.

AUTHOR(S)/ CONTRIBUTOR(S):
World Health Organization & Health Protection Agency (Ministry of Health)

RESEARCH DURATION:
2011

OBJECTIVES:
The STEPs survey aims to study the prevalence of major risk factors for NCDs and the distribution pattern of these among the Male' population.

RATIONALE/JUSTIFICATION:
Following the NCD STEPs survey of 2004, it is observed that there has been limited number of programs specific for NCD prevention and control. In addition to this, from 2004 till 2011, due to internal migration, technological and urban development it is believed to have contributed to lifestyle changes that may have given rise to increased risk factor prevalence in the city. However, it is believed that the exposure of the population to health information over media channels may compensate for the scarcity of specific health programs. Thus, the study is conducted to study the changes of risk factor burden in this urban community for NCDs over a period on 7 years, provide information to determine public health priorities and to predict future caseload of chronic diseases.

METHODOLOGY:
The study is cross-sectional and is conducted in Male' City, whose population accounts for one third of the total population of the country. The target population was selected as individuals, both men and women, between 15 and 64 years of age residing in households of Male'. Stratified multistage sampling was used utilized to select individuals from all 6 wards of Male' City. A listing of all households from the 6 wards was obtained, and key eligible individuals from household were selected by Kish method. The total sample size was 2000 households. Due to insufficient number of respondents belonging to the age group of 55-64 years, oversampling was carried out to include an additional respondent of this age group, for selected households. Kish methodology was used for this purpose.

RESULTS/ FINDINGS:
A total of 1780 individuals (664 men and 1116 women) aged 15-64 years participated in the survey. An 18.8% (34.7% of men and 3.4% of women) of individuals were current smokers. The proportion of daily smokers was15.5% (29.1% of men and 2.2% of women). The mean average at which smoking was initiated was found to be 17.8 years. 0.9% of individuals (1.6% of men and 0.2% of women) accounted to be current drinkers. 92.6% of men and 94.6% of women reported to eat less than 5 servings of fruits and vegetables per day. 45.9% of individuals (39.1% of men and 52.4% of women) do not practice recommended levels of physical activities. The mean Body Mass Index (BMI) was found to be 23.7 kg/m3. Proportions of obesity were 8.6% among men and 14.5% among women. The prevalence of high blood pressure was found to be 16.6% (19.0% among men and 14.3% for women). Comparatively from 2004 till 2011, current smoking rates, physical activity levels and consumption of fruits and vegetables have experienced slight decrements, whereas hypertension, mean BMI, overweight and obesity have shown significant increases.

IMPLICATIONS:
Findings from the study suggest incrementing risk factors that will contribute to the burden of NCDs in the country. Although the prevalence was seen to have decreased among the current smokers, the age at which smoking was started had decreased comparatively, indicating a need for stronger public health interventions for youth and adolescents in the country. Maldives being a solely importer of tobacco products, stringent controls on importation and strengthening FCTC may be effective and plausible measures for tobacco control.
The majority of the population is found not to consume recommended amounts of fruits and vegetables. Almost half of men and more than 1/3rd of women are found to have low levels of physical activity. The mean blood pressure of the population is observed to have increased, however, the majority of diagnosed with hypertension were found not to take treatment for the same.
Considering the importance of a nutritional diet and physical activity in the prevention of NCDs, it is recommended to prioritize interventions that will facilitate the availability and affordability of fruits and vegetables, improve enabling conditions for physical activities, along with awareness and behavior change programs. Secondary prevention programs also

are needed to be emphasized for the prevention of complications of diseases such as hypertension.

CONCLUSION:
While NCDs contribute to a 79% of all mortality in the country, the study findings may predict higher rates in the next few years. Key interventions focusing on evidence-based best buys, with overall health systems strengthening within National Action Plans will be needed, in order to address the growing burden of NCDs in the country. Data from the study will help to set baseline for common risk factors prevailing in 2011, from which country projections can be made to achieve targets of Global Monitoring Framework, by 2025.

FULL SURVEY DOCUMENT AVAILABLE FROM:
http://www.who.int/chp/steps/maldives/en

8. RESPIRATORY SYMPTOMS IN RELATION TO HOME AIR CONDITIONING AMONG OFFICE WORKERS IN MALÉ, MALDIVES

AUTHOR(S)/ CONTRIBUTOR(S):
Aminath Shaufa & Robert S. Chapman

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RESEARCH DURATION:
February 2010 – May 2010

GENERAL OBJECTIVES:
The main purpose of this study was to evaluate AC and home dampness as respiratory risk factors in persons working in offices in Male', and to compare the strength of AC and dampness are respiratory risk factors.

SPECIFIC OBJECTIVES:
1.To identify the association between respiratory symptoms and the use of air conditioning at home and in the workplace.
2. To identify the association between home dapness and respiratory symptoms.
3. To compare the strength of AC and home dampness as respiratory risk factors

RESEARCH QUESTION(S):
1. Is there an association between respiratory symptoms and the use of air conditioning at home and in the workplace?
2. Is there an association between home and work place dampness and respiratory symptoms?
3. Which is a stronger respiratory risk factor, home AC or home dampness?

RATIONALE/JUSTIFICATION:
Indoor air quality (IAQ) is one of the major public health issues worldwide. (Graudenz, et al., 2005) Proper ventilation can help improve indoor air quality by controlling humidity and airborne contaminants, both of which can act as health hazards. (Graudenz, et al., 2005)
Air-conditioning systems are increasingly in use in hot, tropical countries to promote thermal comfort residents and workers. Few studies have compared the people living as well as working in buildings with Air conditioning systems and natural ventilation and the researchers found the associations with AC are rhinitis, sinusitis, allergic wheeze, cough, and breathlessness.
To the best of my knowledge, there are no previous studies done in Maldives to evaluate the association

of respiratory symptoms and air conditioning and by doing this study we will be able to identify if there is any association of the common respiratory symptoms in relation to the type of ventilation or dampness in homes and workplace. This will also help in the future to give suggestions in order to lessen these exposures of the residents in Malé.

RESEARCH HYPOTHESIS:

1. There is an association between respiratory symptoms and the use of air conditioning at home and in the workplace.
2. There is an association between home and work place dampness and respiratory symptoms.
3. Home AC has a stronger risk factor than home dampness

METHODOLOGY:

This study was a cross-sectional study done among the office workers in Male, the capital city of Maldives. The data for this study was collected at government and private sector offices.

Stratified random sampling was used. The office buildings were stratified into two subgroups, private and government buildings. Out of 30 buildings, 6 buildings were randomly selected from each sector. The floors of a building varied from 4 to 8 and the number or workers in a floor varied from 20-70 One floor from each building was then selected randomly, and all the workers in the selected floor were chosen as the study participants. Basement and ground floor of the all the buildings selected were excluded.

Study participants who were men and women from 20 to 60 years old, who worked at the office for at least 8 hours a day. A total of 353 persons participated in the study. A self- administered questionnaire was developed from respiratory symptom questionnaires, which have been widely used previously, especially the American Thoracic Society standardized questionnaire4). The questions were directed toward gaining information about socio-demographic characteristics, home environment, workplace characteristics and symptom and illness prevalence's. Data were processed and analyzed using SPSS version 16 for windows. Descriptive statistics including frequency and percentage were used primarily to summarize the 25independent variables and 11 dependent variables. Associations were tested first with bivariate analysis of each outcome in relation to each independent variable. Multiple logistic models were then constructed for outcomes for which $p \leq 0.15$ for home AC in bivariate analysis. For each such outcome, a semi-final logistic model included all independent variables for which $p \leq 15$ in bivariate analysis. Final logistic regression models were then constructed, which included home AC and all other independent variables for which $p \leq 0.15$ in semi-final models. Statistical significance was assumed at $p \leq 0.05$ and marginal significance at p value between 0.05 and 0.10

RESULTS/ FINDINGS:

Among all participants, 47% of people lived in an air-conditioned home while 51% lived in a naturally or ventilated home. All the office buildings selected had air conditioning, so it was not possible to test effects of office air conditioning on respiratory symptom and illness prevalence. Bivariate analysis was done to check the symptom prevalence's in relation to the presence of home air conditioning. Out of the 11 outcome variables, cough with or without colds (55.4%) phlegm with or without colds (35.2%) and doctor-diagnosed sinus trouble (39.2%) were positively and statistically significantly associated with presence of home AC. Multiple logistic regression models were constructed for these 3 outcomes. In the Final logistic models presence of home AC remained positively associated with all 3 outcomes. Its association with cough remained significant ($p=0.030$), its association with phlegm was marginally significant ($p=0.054$), and its association with sinus trouble was not significant. Similar bivariate and multiple logistic regression analysis were conducted for presence of home dampness. There were 7 outcomes for which $p \leq 0.15$ in bivariate analysis for home AC and/or home dampness. In the final logistic regression models for all the outcomes home dampness was a stronger and more consistent respiratory risk factor than was for home AC.

IMPLICATIONS:

1. Removing AC is not a realistic solution to reduce the exposures. However, suggestions of proper maintenance of AC systems can prevent the indoor air pollution and hence prevent exposures
2. Reducing hazardous exposures in the indoors such as home dampness, mold growth are important for all the residents to reduce the health outcomes. This can be achieved by educating the people, about the ways that can prevent and minimize these exposures in future controlling water leakage and moisture in buildings

In this study home AC and home dampness were both shown to be respiratory risk factors, however home dampness was a stronger risk factor than home AC. Further research is needed to determine the generalizability of these findings and to identify specific ways by which to reduce indoor environmental exposures that are harmful to respiratory health.

In accordance with similar epidemiological studies done in other countries, this study also suggested strong association of respiratory symptoms and home

dampness. The prevalence of respiratory symptoms was shown to be high among the respondents who lived in air conditioned homes in comparison with the homes that had no air conditioning. Though the study has several limitations, it suggests the importance of controlling humidity and airborne contaminants such as mold growth, moldy odors which can act as health hazard.

CONCLUSION:
The findings of this study suggest that AC and home dampness were two independent factors with respect to their associations with the respiratory symptom rates. Having AC in the homes was a risk factor that showed associations with some of the respiratory symptoms analyzed. The presence of dampness was more strongly associated with the respiratory symptoms in this study. The study confirmed the importance of air quality in Maldives that needs to be taken into account. It also suggested the importance of further study to confirm and extend these findings and an effort should be made to minimize the harmful exposures.

FULL ARTICLE AVAILABLE FROM:
http://cphs.healthrepository.org/bitsream/123456789/1482/1/Thesis_2009_Aminath.pdf

9. HEALTH SCREENING FOR GRADE ONE IN MALE' AND GREATER MALE' AREA

AUTHOR(S)/ CONTRIBUTOR(S):
Staff of Medical Service, Maldives National Defence Force

RESEARCH DURATION:
2014

OBJECTIVES:
To detect health and health related problems of grade one students of Male' and greater Male' area.

RATIONALE/JUSTIFICATION:
Health screening has been one of the modalities for detecting health and health related problems. Ministry of Education has been carrying out these screening through various sources thus it was not possible to compile a comprehensive report. With this in mind the ministry of Education went in to a Memorandum of Understanding (MoU) with the Maldives National Defence Force (MNDF) on the 19th Feb 2014. Under this MoU the Medical Service of MNDF carried out the work of screening.

METHODOLOGY:
All the schools, numbering sixteen having Grade One students were identified. A schedule drawn for the personnel form the medical service to visit them and students were brought in as per schedule with their parents/guardians. The visiting group form Medical Service comprised of nurses, paramedical staff and at least one physician. A brief history of medical condition was taken and a physical examination was given. In particular physical attributes like Body Mass Index(BMI), dental examination and an eye checkup was given. Other relevant systemic examination was done. Relevant advice was given to the parents/ guardians.

RESULTS/ FINDINGS:
A total of 1899 students amongst the 2298 students studying in Grade One were screened giving a aggregate coverage of 82.63 percent. Out of the survey the majority of the students were of six years of age amounting to almost 63 percent of the sample. Out of the students surveyed 945 were females and 954 were males giving a rather equal sex distribution There are 22 percent overweight and obese children while 34 percent are actually underweight while the majority 44 percent felt in to the normal weight

category. 318 students amounting to 16.75 percent students had eye problems most of them related to vision. 337 students amounting to amounting to 17.75 percent had dental problems and most of the patients are not aware of this.

CONCLUSION (INCLUDING RECOMMENDATIONS):
While major diseases were not found, parents and guardian's awareness of the common pediatric diseases was found to be less than expected. With 17.75 of the sample population having dental problems oral Hygiene needs to be emphasized in school programmes. With 16.75 percent of the target population having eye problems most of them related to visual acuity, teachers should be taught to identify these telltale signs of visual acuity. School nutritional programmes should be more targeted with the wide range on both sides of the BMI. While this survey gave good baseline data it should be extended to the atolls in a more uniform manner to cover the whole population and to gorge the difference in the capital and islands. Even though the survey was not treatment oriented in nature the survey managed to identify a number of problems for which appropriate referrals were made. It is important that these students need to be followed up. This survey should be a continuum to identify emerging trends.

10. FACTORS ASSOCIATED WITH RISK OF MALNUTRITION AMONG ELDERLY PATIENTS IN THE OUT-PATIENT DEPARTMENT OF THE TWO MAIN HOSPITALS OF MALDIVES

AUTHOR(S)/ CONTRIBUTOR(S):
Asiya Abdul Raheem

OBJECTIVES:
The aim of this study was to investigate the risk of malnutrition, and its associated factors among elderly patients in the out-patient department of the two main hospitals in Maldives.

RATIONALE/JUSTIFICATION:
Malnutrition is common in the elderly population, and the prevalence of malnutrition among Maldivian elderly patients is not known.

METHODOLOGY:
A cross-sectional study was conducted among 74 elderly subjects of age 60 to 88 (mean 77.23±7.06) years, in out-patient department (OPD) of Indira Gandhi Memorial Hospital (IGMH) and ADK hospital who visited for medical purposes.
Risk of malnutrition was screened using MNA-SF. Socio-demographic and health-related information was collected by self-developed pre-tested questions. Other information were collected using 15-item Geriatric Depression scale (GDS-15) for depressive symptoms, 10-item Barthel's index for Activities of Daily Living (ADL), 8-item Lawton and Brody Scale for Instrumental Activities of Daily Living (IADL), and Elderly Cognitive Assessment Questionnaire (ECAQ) for cognitive functioning. Anthropometric data were collected using instruments in the hospitals.

RESULTS/ FINDINGS:
17.6 % were categorized as malnourished and 40.5% at the risk of malnutrition. Presence of acute illnesses was the only health-related factor to have an association with risk of malnutrition ($p = 0.04$). ADL ($r = 0.36$, $p < 0.001$) and IADL ($r = 0.47$, $p < 0.001$) were significantly associated with risk of malnutrition. Body Mass Index ($r = 0.24$, $p = 0.04$), Mid-Upper Arm Circumference ($r = 0.37$, $p < 0.005$), and Calf Circumference ($r = 0.45$, $p < 0.001$) were significantly associated with risk of malnutrition.

CONCLUSION:
Risk of malnutrition in this study population was alarmingly high. Presence of acute illness, and impaired ADL, and IADL were the risk factors of malnutrition. MNA-SF was correlated with anthropometric data; hence, it was effective in predicting risk of malnutrition.

NATIONAL HEALTH RESEARCH PRIORITY AREAS

Priority setting for health research is an important task undertaken to meet the needs of the health system. During this process the policy makers and other key decision makers can give guidance to the areas of health that needs to be researched in a particular area/ country.

Health research priority lists also facilitates the effective utilization of resources and pools these resources to health issues that are most significant for a particular community and/or country.

The list below is the most recent health research priority list, which was compiled after discussion with key stakeholders. This list will be routinely updated to meet the demands of health issues that need to be researched within Maldives.

1. Cardiovascular diseases
2. Non Communicable Diseases / NCDs
3. Thalassemia
4. Infertility
5. Cancer
6. Expenditure of Health Care delivery
7. Pattern of local trend health professionals in system
8. Social issues and its burden on Health
9. Kidney diseases
10. Sustainability of universal health insurance scheme
11. Communicable Diseases / CDs – emerging and re-emerging infectious diseases
12. Obesity in Maldivian population (adult and childhood obesity)
13. Diet and nutrition
14. Challenges to successful implementation of health policy
15. Health care quality management
16. Retention of Local trained health professionals in health sector
17. Mechanism of providing quality health care and essential medicine to Maldivian population
18. Study on Caesarian Section
19. Prevalence study on birth defects
20. Causes of low prevalence of contraceptive use

ONGOING RESEARCHES (2014-2015)

NATIONAL HEALTH RESEARCH COMMITTEE APPROVED RESEARCHES

Socioeconomic and Religious Factors Influencing Contraceptive Use and Family Planning in the Maldives. (Researchers: Dr. Ali Fawaz Shareef, Dr. Dheeba Moosa, Dr. Raheema Abdul Raheem, Dr. Abdulla Sadig & Ms. Mizna Qasim)

Quality of Life and self-esteem among young adults with Thalassemia
(Researcher: Shinaee Igbal)

Knowledge, attitude and practices of dengue among people in high prevalent island communities of Maldives.
(Researchers: Aminath Shaufa, Fathimath Rasheeda)

Lifestyle Intervention Program for the Prevention of Diabetes.
(Researchers: Naila Abdul Majeed)

RESEARCHES TO BE APPROVED BY NATIONAL HEALTH RESEARCH COMMITTEE

Determining Economic Burden of Dengue Case Management in the Maldives
(Researcher: Mariyam Shafeeq)

Effect Of Self-Efficacy And Collective Efficacy On Nurse Job Performance In The Tertiary Care Hospital, Indira Gandhi Memorial Hospital (Igmh), Maldives.
(Researcher: Jeeza Hassan)

Geographic Variation Of Postnatal Care Utilization Among Reproductive Age Women In City, Urban, And Rural Areas Of Maldives
(Researchers: Sheeza Ibrahim)

NATIONAL HEALTH RESEARCH COMMITTEE & PROCEDURE

The National Health Research Committee (NHRC) was established in 1999. It was established as per a strategy outlined in the Health Master Plan 1996-2005 in order to strengthen the development and implementation of research relating to the health sector. The Health Information and Research Unit of Planning and International Health of Ministry of Health is the secretariat of this Committee. Since the establishment of the NHRC, it was agreed that all heath sector research projects be submitted to the Committee and its approval be sought before implementation. In this regard, the Ministry of Health issued a circular (23-C3/99/C-24) on August 15, 1999 to implement this strategy effective from September 01, 1999.

With effect from this date, the NHRC received several research proposals for approval. However, due to the lack of proper guidelines, the proposals received by the Committee were found to lack in some important aspects that had to be reviewed under the mandate of the Committee. A guideline was developed to assist medical and nursing practitioners, programme managers, students and other health care researchers in developing research proposals for submission to the NHRC. This revision is made along with Committee.

APPLICATION FOR RESEARCH REGISTRATION AND APPROVAL

Each proposal submitted for approval should have a Research Registration Form completed with it. The Research Registration Form and copies of the guideline can be obtained from the Health Information and Research Unit of Planning and International Health of Ministry of Health and on the Ministry of Health website at www.health.gov.mv. Proposals should be submitted to the Ministry in print and in electronic form. One copy of the printed proposal should be submitted to the Health Information and Research Unit of Planning and International Health of Ministry of Health at Ministry of Health. Proposals can also be mailed to ppd@health.gov.mv.

National Health Research Committee, Health Information and Research Unit, Planning and International Health, Ministry of Health: 00 960 32 8887 ext: 142, 158 Email: ppd@health.gov.mv

Ministry of Health