Effect of raising tobacco taxes on cigarette consumption of youth age between 18 -25 years in Baa. Goidhoo

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THE MALDIVES NATIONAL UNIVERSITY

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DECLARATION

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I hereby declare that this Project is the result of my own work, except for quotations and summaries which have been duly acknowledged.

Signature: Date: 02nd June 2016

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ABSTRACT

This study investigated the effect of raising tobacco taxes on the youth cigarette consumption of age between 18-25 years in Baa Goidhoo. The main objective of this study is to find the effectiveness and influence of raised cigarette taxes on smokers among the youth population. This is a community-based descriptive cross-sectional study done by using quantitative data. The study population is 89 smokers between 18-25 years who are living in Baa Goidhoo. Out of 89 smokers, 72 participated in the study, which is 80.89% of the study population. From the 72 participants, 22 (30.6%) said they have decreased cigarette consumption and 50 (69.4%) said they have not decreased cigarette consumption. Among the participants who said they have decreased smoking after tax increase, the majority, 16 (72.7%) said because it is expensive. Among them who said that they have not decreased smoking after tax increase, the majority, 26 (52%) said it is difficult to stop or decrease because they are addicted. Before the tax increase, 6 (8.3%) participants said they smoke between 5 and 10 cigarettes per day, 44 (61.1%) said they smoke between 10 and 20 cigarettes per day and 22 (30.6%) said they smoke more than 20 cigarettes per day and after the tax increase, 23 (31.9%) participants said they smoke between 5 and 10 cigarettes per day, 32 (44.4%) said they smoke between 10 and 20 cigarettes per day and 17 (23.6%) said they smoke more than 20 cigarettes per day. The results shows that there is a high significant relationship between income and cigarette consumption with a P value of <0.005.

Keywords: Cigarettes, Taxes, Youth, Baa. Goidhoo, Relationship.

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List of abbreviations

WHO – World Health Organization

CDC – Centre for Disease Control and Prevention

TFK – Tobacco Free Kids

SEATCA - Southeast Asia Tobacco Control Alliance

CCHDC - Center for Community Health and Disease Control

HPA – Health Protection Agency

MDHS - Maldives Demography and Health Survey

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Chapter 1

Introduction

1.1 Background of the study

The widespread of tobacco is one of the biggest public health threats the world has ever faced till today. According to WHO, there are 1.1 billion tobacco users in the world and over the next two decades it is estimated that the number will increase to 1.6 billion.

Due to use of tobacco and smoking, approximately six million people die every year. From this number about five million of those deaths result from direct tobacco use, despite the fact; more than 600 000 are non-smokers they die as a result of being exposed to second-hand smoke If the correct and serious action is not taken, the number of deaths annually may increase to more than eight million by the year 2030 (WHO, 2014).

As estimated that nearly one person dies every six seconds due to tobacco use, correspondingly one in 10 adult deaths. About half of current tobacco users will sooner or later die of a tobacco-related disease or condition. And Approximately 80% of the world's smokers live in low- and middle-income countries (WHO, 2014).

Focusing on the smoking prevalence in Southeast Asia region, at least 10 percent of the total number of smokers worldwide is from Southeast Asian countries (Crisostomo, 2013). As per the 2013 Association of Southeast Asian Nations Tobacco Control Atlas of the Southeast Asia Tobacco Control Alliance (SEATCA), 127 million or 30 percent of adults in the 10 ASEAN countries are smokers.

When it comes to Maldives, The Center for Community Health and Disease Control (CCHD, now HPA) estimates that the 44 percent of the total population of Maldives use tobacco. According to the Maldives Demography and Health Survey (MDHS) 2009, 42 percent of people in the age group 20-24 are smokers while 20 percent of 15-19 years age group smoke.

1.2 Problem statement

As the prevalence rate of smoking is increasing worldwide day by day and it has been estimated that it will further increase in the coming decades, there must be ways to reduce this problem. Every year, on 31 May, WHO marks World No Tobacco Day, highlighting the health risks associated with tobacco use and advocating for effective policies to reduce tobacco consumption.

WHO stated that the most effective approach to controlling the spread of tobacco use is through policies that directly reduce the demand for it. There are many valuable ways of going about this, from advertising bans to public smoking prohibitions, but the most potent and cost-effective option for governments everywhere is the simple elevation of tobacco prices by use of consumption taxes. This will reduce tobacco use, especially among youth and poor people (WHO, 2014)

Many countries have taxed cigarettes and other tobacco products. More recently, countries have increased tobacco taxes to reduce tobacco use. The issue of smoking has recently been under close scrutiny by the government of Maldives too. In recent years, cigarette advertising has been banned by the government. And also prohibited smoking in public places and introduced fines for those who transgress. But this fine system said to be not working or not implemented at all. The Maldivian government has recently increased the taxes on cigarette in order to decrease smoking among people. The bill passed in parliament in 2011 and started to implement in 2014. The current tax rate is 200% from cigarettes and 150% from other tobacco products.

In this paper, the research question is that do youth smokers decrease their consumption of cigarettes when there is an increase in cigarette taxes. The research and analysis that follow will investigate this claim.

1.3 Objectives of the Study

General objective

The main objective of this research is to find the effectiveness and influence of raised cigarette taxes on smokers among the youth population between 18-25 age group in Baa Goidhoo.

Specific objectives

- To find out the effect of cigarette taxes on the consumption of cigarette in the youth population.
- To understand the factors influencing to decrease or not decrease smoking among youth population.
- To find out the relationship between income level and the amount of cigarette smoking after increasing the tax.

1.4 Research question

Is there any effect on the consumption of cigarette among youths between 18-25 years age group by raising the cigarette taxes?

1.5 Significance of the study

As the youth smoking is increasing day by day, and there will be many health consequences that arise due to smoking. As taxes are raised to reduce the cigarette consumption, it is necessary to determine the effect on youth cigarette consumption, whether it reduces consumption and the objective of increasing the taxes is achieved or not.

1.6 Scope of the study

This study will focus on the effectiveness and influence of increased cigarette taxes on the consumption of cigarettes among youth population. And also to find out other factors that influence their smoking behavior.

1.7 Definition of terms

Taxation: to impose and collect a tax on something.

Relationship: the connection or association between two things.

Youth: the age group between 18-25 years.

Consumption: the act of consuming something / the act of eating, drinking or using something.

Population: a group of persons in a research or study from which a sample is drawn.

Prevalence: the quality or state of being prevalent.

Knowledge: general understanding or familiarity with a fact, place or situation.

1.8 Follow of the dissertation

Chapter One

Chapter one contains the introduction of the study, starting from the back ground information of this study. A brief introduction is given on the place in which this study is conducted. And after that back ground information of research topic and problem being studied is given. The main aim of this chapter is to give the person who reads brief information on research problem, objectives and purpose of research, justification of research and research questions. At the end of this chapter definition of terms and abbreviations has included which will use in rest of the research.

Chapter Two

Chapter two contains literature review. The literature review was done on previous researches conducted around the world on the same discipline of this research. Those researches were critically evaluated reviewed correlating the topic of this study.

Chapter Three

This chapter contains methodology of the research. Including research design, population sample size and type, method of data collection and type of the instruments used in the research. This chapter also gives clear idea of how, when and where the research is conducted.

Chapter Four

This chapter presents analysis of the data collected on the study using tables and figures. The main aim of presented and analyzed data is to address research question as much as possible. This part included results of each question asked in the survey and brief description of each result.

Chapter Five

This chapter contains discussion and conclusion of the results of the data analyzed in the results. This chapter also includes conclusion of the research, limitation of this study, recommendation, and how much the results could be applied publicly.

Chapter Six

This chapter presents a list of all the reference used in this research. References are in APA standard.

Annex

In annex there is an Information Sheet, Consent Form and question air that is used to perform this study.

Chapter 2

Literature review

Many countries have higher taxes on cigarettes and tobacco products in order to reduce the consumption. There are lots of studies done to find the effect of increased taxes on cigarettes and several studies concerning the consumption of cigarettes and the independent variables linked with that consumption among youth. Almost all of the studies have shown that taxes can be significant in reducing smoking.

In a study done in 2012 supports this hypothesis that the young age group (18-24) would see a decrease in the percentage of people smoking if taxes were increased. The parameter estimate for the tax variable in the 18-24 year old group did indicate that increases in taxes would decrease the percentage of people smoking and thus uphold hypothesis. (Patrick & Elon, 2012).

In a study by International Journal of Environmental Research and Public health shows that increased prices result in reductions in smoking behavior, the magnitude of the effect tends to be smaller than for youth. The study has found that price is inversely related to both smoking participation and consumption. (Pearl, David, & Roberta, 2011).

According to the Tobacco-Free Kids (TFK) and the American Cancer Society Action Network, increasing the cigarette tax from 44 cents to $2 – an increase of $1.56 per pack - can reduce youth smoking by 25 percent. (TFK, 2015)

In studies in the U.S, researchers found that the 61.66-cent federal cigarette tax rate increase on April 1, 2009 had a considerable and instant impact on youth smoking. The percentage of students who reported smoking dropped between 9.7 percent and 13.3 percent immediately following the tax increase, resulting in an estimated 220,000 and 287,000 fewer current smokers among middle and high school students in May 2009. (Ann, 2011).

In another study done in U.S. to examine the impact of cigarette prices, taxes, and tobacco control policies on youth and young adult smoking propensity and intensity throughout the years 1997–2001. At that time there were major changes in cigarette prices and tobacco control policies across the country. The study found that there was a strong negative impact of cigarette prices and taxes on youth and young adult smoking. This means when the price increases smoking decreases. (Cawley, Markowitz, & Tauras, 2005)

In another study done in U.S to understand the effect of taxes on smoking, when a 40% tax is taken and in result when the cigarette price increase, this would reduce smoking prevalence from 21% in 2004 to 15.2% in 2025. (Ahmad & Franz, 2007)

In order to update data on state cigarette excise taxes in U.S in 2009, CDC conducted a survey of changes in state cigarette excise taxes during 2010–2011. During that period, eight states increased their cigarette excise taxes, and one state decreased its tax; as a result, the mean state tax increased from $1.34 in 2009 to $1.46 in 2011. Previous evidence indicates that further increases in cigarette excise taxes would be expected to result in further reductions in demand for cigarettes, decreasing smoking. (CDC C. f., 2012).

There was a national tobacco tax increase in 2009 in the U.S and a study was conducted to observe the impact of the tax increase on the use of cigarettes and smokeless tobacco products among youth. The results of the study disclosed that this tax increase had a substantial short-term effect. The percentage of youths who were smoking in the past 30 days dropped between 9.7% and 13.3% immediately following the tax increase. The long-term probable number of youth prevented from smoking that stemmed from the 2009 national tax increase could be much larger and higher tobacco prices would prevent more children from beginning smoking. (Huang & Chaloupka, 2012)

Another study in U.S clearly shows that increasing cigarette and other tobacco taxes will lead to significant reductions in the use of these products, resulting from reductions in the frequency of use by continuing users, as well as reductions in the prevalence of use. Given this evidence, higher tobacco taxes are likely to be the single most effective policy option for reducing the public health toll from tobacco. When combined with other tobacco control activities, which could be funded by earmarked tobacco taxes, even larger reductions in youth and adult tobacco use could be achieved. (Chaloupka F. J., 2010).

In addition, a another report on the health and economic benefits of tobacco taxes found that a $1-per-pack cigarette tax increase in every state and Washington, DC, would result in 1.4 million adults quitting smoking. (Carrie, 2011).

In Brazil, taxes and prices increases have great potential to stimulate cessation or reduction of cigarette consumption further among two important vulnerable populations of smokers: young smokers and those of low educational level. (Gigliotti, et al., 2014).

In another study conducted to learn the effects of several price increases on youth demand for cigarettes. The results endorse that the higher cigarette prices, regardless of the way they are measured, reduce the possibility of youth cigarette smoking. When the price is high smoking is low. (Ross & Chaloupka, 2002)

In a study done to find out the impact on cigarette consumption when the cigarette and other tobacco taxes is increased, the results show that, increases in tax will lead to significant reductions in the use of tobacco products. The results show that there are reductions in the frequency of use by continuing users and also reductions in the prevalence of use. This result gives indication that higher tobacco taxes are expected to be the single most effective strategy of choice for reducing tobacco use. This strategy can be fused with other tobacco control activities, so the result would be much greater in reducing youth and adult tobacco use. (Chaloupka, 2012)

The youths are two to three times more price-responsive than the general population according to different studies conducted to observe the effects of increased price on youth. Even though the price elasticity estimates differ through studies, they can come to an agreement that increased prices decrease both smoking participation and consumption of cigarettes. (Bader, Boisclair, & Ferrence, 2011)

Many say that cigarette price is an important determining factor of smoking. The estimated price elasticity of smoking participation is −0.74, and the estimated price elasticity of conditional cigarette demand is approximately −1.37. The total price elasticity of cigarette demand is −2.11. This data entails that an increase in price by 10%, this would reduce youth cigarette consumption by 21.1%. (Kostova, Ross, Blecher, & Markowitz, 2011)

Most studies found that raising cigarette prices through increased taxes is a highly effective measure for reducing smoking among youth. On the other hand, there is a remarkable lack of evidence about the impact of increasing cigarette prices on smoking behavior in heavy/long-term smokers. (Bader, Boisclair, & Ferrence, 2011)

A study done to examine the increase in U.S. cigarette prices and cigarette consumption, when linking the trends in cigarette prices and cigarette consumption from 1970 to 2011 demonstrates a strong correlation between increasing prices and decreasing consumption. As a result of the 2009 national tax increase, cigarette packs sales dropped by a record 8.3 percent in 2009. From 2000 to 2011, as a result of the national tax on cigarettes the prices increased from 34 cents to $1.01 per pack and the average state cigarette tax increased from 42 cents to $1.46 per pack. It is very certain that, if these taxes were not increased, the smoking levels would surely be much higher. (TFK, 2015)

Moreover, another study to examine the effect of increased taxes on younger individuals smoking; the results state that the younger individuals are more responsive to price changes than older individuals. They tend to decrease smoking when the price is increased. Even though older age groups are less sensitive to price changes, there is great change in their smoking behavior. (Franz, 2008)

Another about taxes study done in Australia shows that if taxes can be set high enough to ensure that the cost of the smokers' preferred packs exceeds critical price points, then it seems likely that more people would seriously attempt to quit than if the price increased to a level even slightly below the price points. Moreover the study suggests that a tax increase large enough to ensure that a typical pack of 25 cigarettes in Australia cost at least AUD$20 would prompt more than 60% of smokers able to nominate a price point to seriously think about quitting. (Scollo, Hayes, & Wakefield, 2013).

Broad tobacco-control programs using several price and non-price interventions can considerably raise smoking-cessation rates and decrease initiation of smoking. In Uruguay they implemented most of the FCTC provisions and reduced consumption more rapidly than Argentina, which implemented only a few of the provisions.

Similarly, an International Agency for Research on Cancer review of more than 100 econometric studies confirmed that tobacco taxes and consumption are strongly inversely related. It concluded that a 50% increase in tobacco prices reduces consumption by about 20% in both high-income countries and low- and middle-income countries. Higher taxes are very effective in helping to prevent young people who are experimenting with smoking from becoming regular smokers. (Prabhat & Richard , 2014)

In Canada, studies on cigarette taxes on smoking participation. It has been observed that if taxes increase by 10%, smoking participation will fall by about 2.3%. (Sunday & Mesbah, 2011)

Lebanon is among the countries with highest Tobacco consumption rates in worldwide. The country ratified the Framework Convention on Tobacco Control in 2005. A law was passed in 2011 which regulates smoking in closed public spaces, bans advertising, and stipulates larger warnings and studies show that, increasing taxes on all tobacco products so as to double the price of imported cigarettes would lower their consumption by 7% and consumption of domestically produced cigarettes by over 90%. Young adults (ages 15–30) are more sensitive: consumption would drop by 9% for imported cigarettes and by 100% for domestic cigarettes (Nisreen, Jad, Rima, & Hala, 2013).

There are many researches done to find effects of reduction taxes on cigarette consumption. One study shows that there is a strong increase in smoking in youth in the years following the reduction in tobacco taxes. The increase was stronger in women. The rates returned to pre-1990 rates by about 2002. The number of excess daily smokers for people born between 1977 and 1985 that can be linked to the taxation reduction is about 190,000. (Birkett, 2014)

Another study shows that low reliance on specific excise taxes on tobacco by China, India, Indonesia, and most low- and middle-income countries means that the prices of commonly sold cigarette brands vary greatly within each country and this continued availability of low-cost brands discourages smoking cessation (Prabhat & Richard , 2014).

While cigarette taxes remain popular with policy makers as a key anti-smoking measure, their effectiveness largely depends on how people respond to them. Identifying the socio-demographic characteristics of smokers who respond differentially to tax increases will help in designing appropriate supplementary measures to reduce smoking as there is no one-size fits all strategy for discouraging smoking.

There is still much to be learned, the existing studies clearly indicates that macro-level interventions, including increased tobacco taxation and stronger tobacco control policies, can be very effective in reducing cigarette smoking and other tobacco use, particularly among youths and young adults. (Frank & Rosalie, 2012)

Chapter 3

Methodology

3.1 Introduction

This chapter mainly laid emphasis on the research design, population and sample, instrumentation, data collection procedures and framework for data analysis. After collecting the data, to get an accurate result, the data need to be analysed very well. Therefore the methods used for data analyse is also stated.

3.2 Research Design

This is a community-based descriptive cross-sectional study done by using quantitative data to find out the effect of raising tobacco taxes on the cigarette consumption of youth of age between 18-25 years living in Baa Goidhoo.

3.3 Population and Sample

The study population is 89 smokers between 18-25 years who are living in Baa Goidhoo. The target was to cover more than 60 percent of the population. The most number of available participants were selected. Out of 89 smokers, 72 participated in the study, which is 80.89% of the study population.

Exclusion criteria

- Residents of other islands
- the foreigners

Inclusion Criteria

- All the people who are available and willing to participate
- People between 18-25 years of age

3.4 Instrumentation

To conduct this study an interviewer administered questionnaire is used. The questionnaire was designed in a way that the objectives of the study can be achieved. Participants were asked to fill the questionnaire in order to collect the necessary data. A designed questionnaire was made in English language for data collection. The questionnaire used in the study is attached in the appendix.

3.5 Validity and Reliability

Before conducting the survey, the questionnaire was pre-tested to see whether participants can understand the questions easily and are able to answer. After pre-testing, if there are any corrections and modifications need to be made, the appropriate modifications were made to the questionnaire. Pretesting helps to correct any faults in the questionnaire. Therefore, ensures the validity and reliability.

3.6 Data collection

This survey was conducted with the help of two enumerators. The data were collected from all the available participants. The enumerators gave instructions to the participants how to fill the questionnaires. The objective of the study and methods were explained to the participants and their written consent was obtained before collecting the data.

3.7 Framework for data analysis

After data collection, data were entered and analysed using SPSS and Microsoft Excel. Then the collected data were presented and explained using charts, tables and diagrams.

3.8 Ethical Considerations

Ethical Considerations are very important in research. Therefore, written consent is taken from every participant before conducting. Every participant have the right to participate or not and anyone can withdraw anytime. The participants were guaranteed that the information will be kept confidential and the information would be only used for the study purpose. The consent form used in the study is attached in appendix.

Chapter 4

Data analysis and results

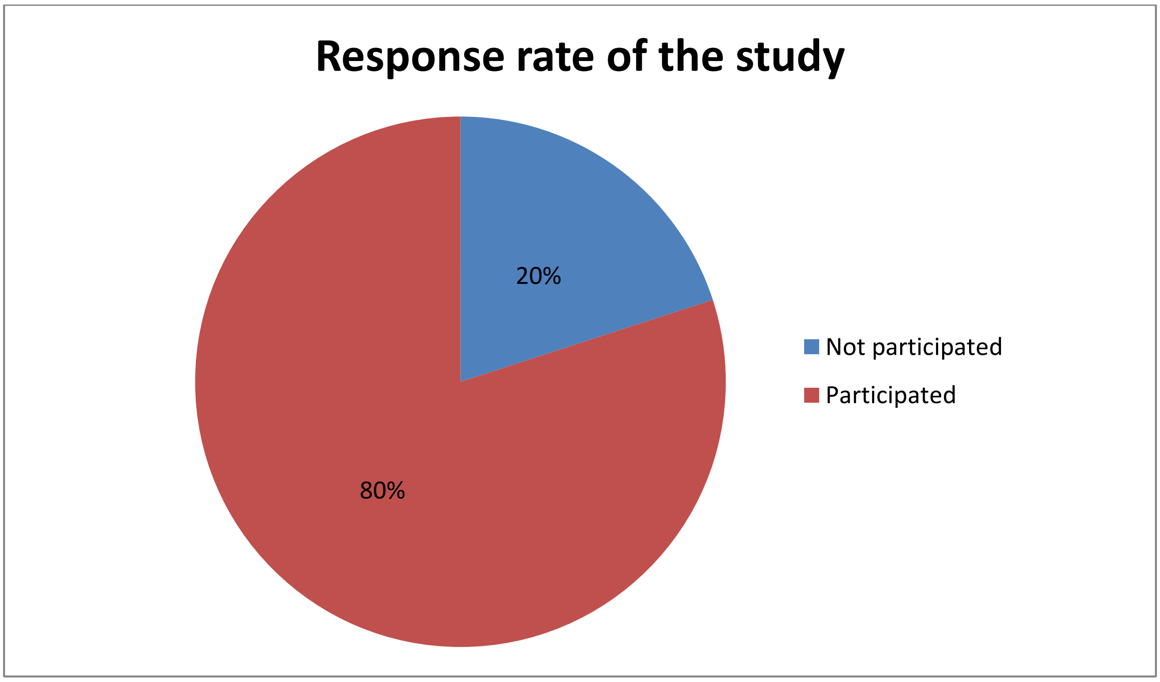
This chapter contains analysis and results of the study. The analysis and results of the data collected in the study is presented using tables and figures.

4.1 Participants response

From 89 smokers between age group 18-25 years, from them 72 participants took part and completed the question air. So the response rate is 80% of the study population. The remaining 20% did not participate in the study due many reasons.

The pie chart below (figure 1) shows the percentage of people who were participated in the survey.

Figure 4.1: Response rate of the study



4.2 Socio Demographic Characteristics

A total of 72 participants were included in the study with 80% response rate.

All the participants of the study are between 18 and 25 age group. 11 (15.3%) participants were age 18 years, 8 (11.1%) participants are 19 years of age, 13 (18.1%) are 20 years of age, 9 (12.5%) are 21 years, 8 (11.1%) are 22 years, 8 (11.1%) are 23 years, 7 (9.7%) are 24 years and 8 (11.1%) are 25 years. The mean age is 21.21.

Out of 72 participants, 100% of them are males. 60 (83.3%) participants are unmarried and 12 (16.7%) are married. Among the participants 67 (93.1%) of them studied up to secondary level and only 5 (6.9%) studied higher secondary and above and there is none of them studied up to primary level.

Among the participants 44 (61.1%) are employed and the other 28 (38.9%) are unemployed. When it comes to income, 28 (38.9%) of them gets an income below MVR 4000, 7 (9.7%) gets between MVR4000 and MVR6000, 6 (8.3%) gets between MVR6000 and MVR8000, 12 (16.7%) gets between MVR8000 and MVR10000 and 19 (26.4%) gets an income more than MVR10000.

Table 4.1: Frequency and percentage of the socio-demographic characteristics

Variable	Frequency (n=72)	Percent (%)
Socio demographic characteristics		
Age (Mean=21.21, SD=2.289)		
18yrs	11	15.3
19yrs	8	11.1
20yrs	13	18.1
21yrs	9	12.5
22yrs	8	11.1
23yrs	8	11.1
24yrs	7	9.7
25yrs	8	11.1
Total	**72**	**100**
Sex		
Male	72	100
Female	0	0
Total	**72**	**100**
Marital status		
Single	60	83.3
Married	12	16.7
Total	**72**	**100**
Educational level		
Primary	0	0
Secondary	67	93.1
Higher secondary and above	5	6.9
Total	**72**	**100**
Occupational status		
Employed	44	61.1
Unemployed	28	38.9
Total	**72**	**100**
Income level		
<4000	28	38.9
4000-6000	7	9.7
6000-8000	6	8.3
8000-10000	12	16.7
>10000	19	26.4
Total	**72**	**100**

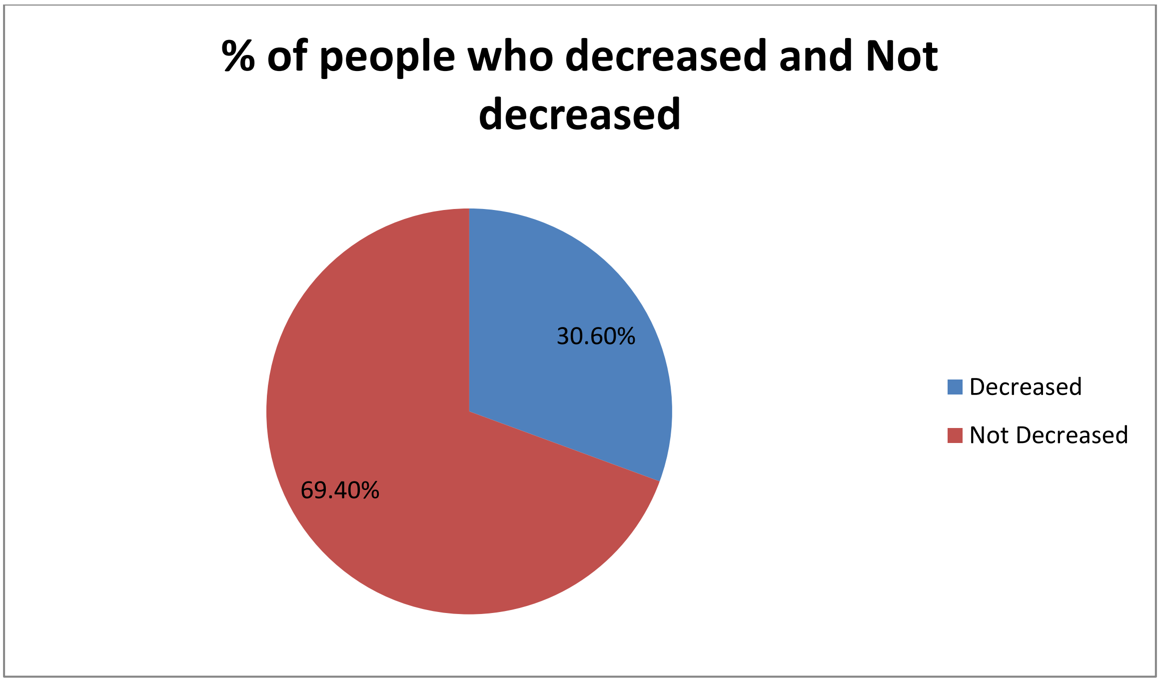
4.3 Effect of cigarette taxes on the consumption of cigarettes.

From the 72 participants, 22 (30.6%) said they have decreased cigarette consumption and 50 (69.4%) said they have not decreased cigarette consumption. The table shows the statistics for effect of cigarette taxes on the consumption of cigarette.

Table 4.2: Amount of cigarettes consumed decreased or not after the tax increase.

Variable	**Frequency (n=72)**	**Percentage (%)**
Amount of cigarettes consumed decreased or not		
Yes	22	30.6
No	50	69.4
Total	72	100

Figure 4.2: Percentage of people who decreased cigarettes consume or not decreased after the tax increase.



4.4 Factors influencing the increase or decrease of smoking among youth population.

22 (30.6%) participants out of 72 said they have decreased smoking after tax increase. Among them, 2 (9.1%) said it was because of the parents, 16 (72.7%) said because it is expensive and 4 (18.2%) said it was because of the health impact due to smoking. The table below shows the statistics of the factors influenced to decrease smoking.

Table 4.3: Factors influencing to decrease smoking

Variable	**Frequency (n=22)**	**Percentage (%)**
Factors influencing to decrease smoking		
Parents	2	9.1
Expensive	16	72.7
Knowing the health impact	4	18.2
Total	22	100

50 (69.4) participants out of total 72 said that they have not decreased smoking after tax increase. Among them 26 (52%) said it is difficult to stop or decrease because they are addicted, 9 (18%) said it is not expensive and 15 (30%) said it gives pleasure so they did not decrease the amount. The table below shows the statistics of the factors influencing not to decrease smoking.

Table 4.4: Factors influencing not to decrease smoking

Variable	**Frequency (n=50)**	**Percentage (%)**
Factors influencing not to decrease smoking		
Difficult (addicted)	26	52
Not expensive	9	18
Gives pleasure	15	30
Total	50	100

4.5 Cigarettes smoked per day before and after the tax increase

Before the tax increase, 6 (8.3%) participants said they smoke between 5 and 10 cigarettes per day, 44 (61.1%) said they smoke between 10 and 20 cigarettes per day and 22 (30.6%) said they smoke more than 20 cigarettes per day. The table below shows the frequency and percentage of the cigarettes smoked per day before the tax increase.

Table 4.5: Frequency and percentage of the cigarettes smoked per day before the tax increase.

Variable	**Frequency (n=72)**	**Percentage (%)**
Number of cigarettes smoked per day before tax increase		
5-10	6	8.3
10-20	44	61.1
>20	22	30.6
Total	72	100

After the tax increase, 23 (31.9%) participants said they smoke between 5 and 10 cigarettes per day, 32 (44.4%) said they smoke between 10 and 20 cigarettes per day and 17 (23.6%) said they smoke more than 20 cigarettes per day. The table below shows the frequency and percentage of the cigarettes smoked per day after the tax increase.

Table 4.6: Frequency and percentage of the cigarettes smoked per day after the tax increase.

Variable	**Frequency (n=72)**	**Percentage (%)**
Number of cigarettes smoked per day after tax increase		
5-10	23	31.9
10-20	32	44.4
>20	17	23.6
Total	72	100

4.6 Relationship between income level and the amount of cigarette smoking after increasing the tax.

Among the participants 28 (38.9%) of them gets an income below MVR 4000, 7 (9.7%) gets between MVR4000 and MVR6000, 6 (8.3%) gets between MVR6000 and MVR8000, 12 (16.7%) gets between MVR8000 and MVR10000 and 19 (26.4%) gets an income more than MVR10000. The table below shows the frequency and percentage of income level.

Table 4.7: Frequency and percentage of income level.

Variable	**Frequency (n=72)**	**Percentage (%)**
Income level		
<4000	28	38.9
4000-6000	7	9.7
6000-8000	6	8.3
8000-10000	12	16.7
>10000	19	26.4
Total	72	100

The chi-square test shows that there is a high significant relationship between income and cigarette consumption with a P value of <0.005. The table below shows the relationship between income level and cigarette consumption.

Table 4.8: The relationship between income level and cigarette consumption.

Variable	**Cigarette consumption (decreased or not)**			**Crude OR**	**95% CI**	**X^2**	**P value**
	no.	**Yes (%)**	**No (%)**				
Income						7.994^a	0.005*
High Income	31	12.9	87.1	1			
Low Income	41	43.9	56.1	1.779	1.242-2.547		

* P value = <0.005

CHAPTER 5

Discussion and Conclusion

This chapter includes the discussion of the results of the study. Also there is conclusion, limitations of the study and recommendation of the study.

The results are discussed according to the objectives of the study. Below are the objectives of the study.

Specific objectives

- To find out the effect of cigarette taxes on the consumption of cigarette in the youth population.
- To understand the factors influencing to decrease or not decrease smoking among youth population.
- To find out the relationship between income level and the amount of cigarette smoking after increasing the tax.

5.1 Discussion of the findings

A total of 72 participants were included in the study and all the participants of the study are between 18 and 25 age group. Among the participants, 44 (61.1%) are employed and the other 28 (38.9%) are unemployed.

As the result shows, from 72 participants, 22 (30.6%) said they have decreased cigarette consumption and 50 (69.4%) said they have not decreased cigarette consumption. That shows clearly that in this study that increasing tobacco or cigarette taxes have not decreased their cigarette consumption as the clearly majority (69.4%) of them said they did not decrease. But there are lots of studies done to find the effect of increased taxes on cigarettes consumption among youth. Almost all of the studies have shown that taxes can be substantial in reducing smoking. In a study done in UK, the huge tobacco tax increases were associated with significant reductions in smoking participation and frequent smoking by youths (Carpenter & Cook, 2007)

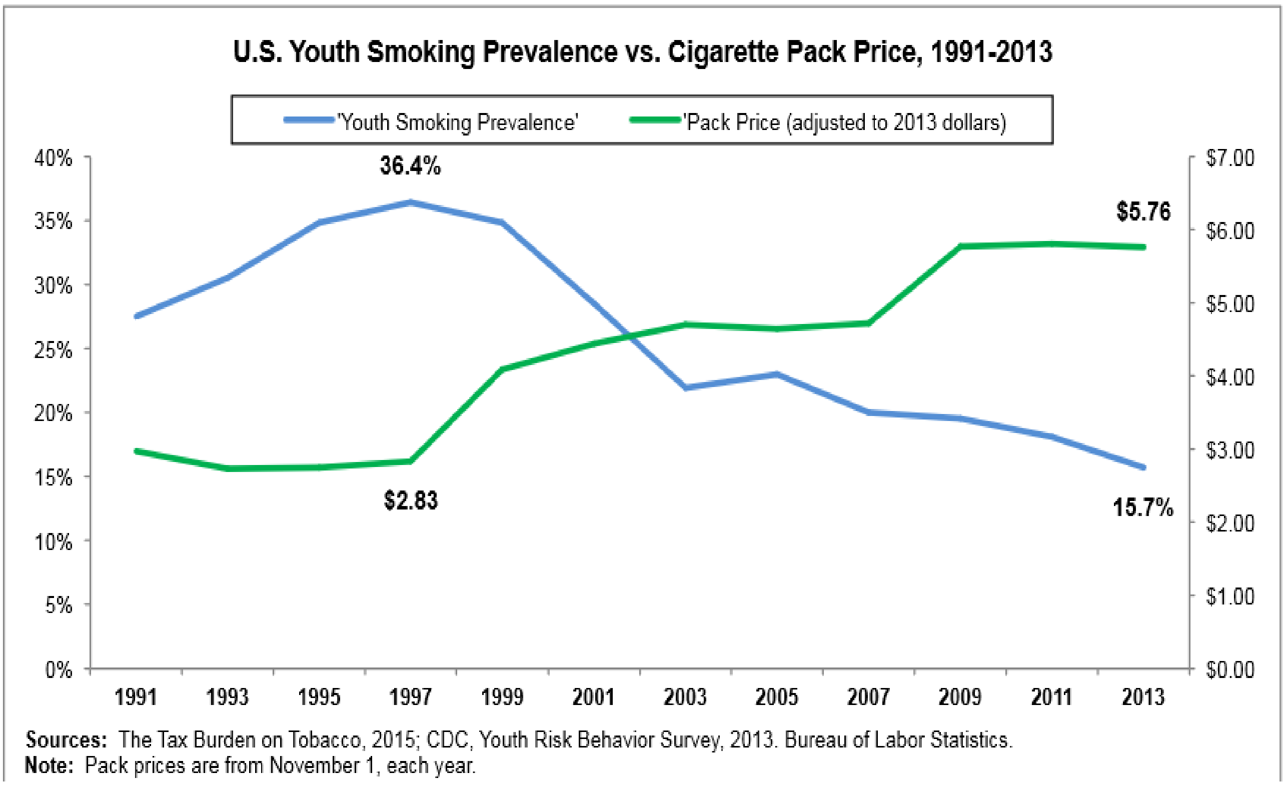
This study found that there is 30.6% decrease in cigarette consumption when there is 200% tax impose on cigarettes. When comparing this result to a study done by International Agency for Research on Cancer, they confirmed that tobacco taxes and consumption are strongly inversely related. Also they concluded that a 50% increase in tobacco prices reduces consumption by about 20% in both high-income countries and low- and middle-income countries. Higher taxes are very effective in helping to prevent young people who are experimenting with smoking from becoming regular smokers. (Prabhat & Richard, 2014)

The 2000 U.S. Surgeon General's Report, Reducing Tobacco Use, found that raising tobacco-product prices decreases the prevalence of tobacco use, particularly among kids and young adults, and that tobacco tax increases produce "substantial long-term improvements in health." The report concluded that raising tobacco taxes is one of the most effective tobacco prevention and control strategies.

According to Campaign for Tobacco Free kids, tax increase is one of the most effective ways to reduce smoking. They found that every 10 percent increase in cigarette prices reduces youth smoking by about seven percent. (TFK, 2015)

The table below shows statistics from The Tax Burden on Tobacco, 2015; CDC, Youth Risk Behavior Survey conducted in 2013. It shows U.S. Youth Smoking Prevalence vs. Cigarette Pack Price from 1991 to 2013. It shows how closely linked youth smoking prevalence is to cigarette pack prices.

Table 5.1: U.S. Youth Smoking Prevalence vs. Cigarette Pack Price from 1991 to 2013



Sources: The Tax Burden on Tobacco, 2015; CDC, Youth Risk Behavior Survey, 2013. Bureau of Labor Statistics.
Note: Pack prices are from November 1, each year.

Although almost all the studies shows that taxes can be substantial in reducing smoking, one study done in UK, the results suggest that youths have become much less responsive to cigarette taxes since 2005 and found little evidence of a negative relationship between cigarette taxes and youth smoking between the period of 2007-2013. (Hansen, J. Sabia, & I. Rees, 2015)

The result shows that, 22 (30.6%) participants out of 72 said they have decreased smoking after tax increase. For the reasons or factors that influence to decrease smoking, 2 (9.1%) them said it was because of the parents, 16 (72.7%) said because it is expensive and 4 (18.2%) said it was because of the health impact due to smoking. Yet there is many factors that effects youth smoking cessation, in this study, I have included mainly these three factors.

The majority 16 (72.7%) said that they decreased smoking due to it is expensive. We can say that this is because of tax increase which led to increase the cigarette price. In Maldives after the tax increase there is 200% tax on cigarettes and 150% tax on other tobacco products which resulting an increase in the price of a pack from 38MVR to 48MVR on average, which is MVR10 increase in each pack of cigarette.

Many different studies have shown that tobacco tax or price increases reduce both adult and youth tobacco use. In every 10 percent increase in the actual price of cigarettes decreases overall cigarette consumption by about three to five percent and decreases the number of young-adult smokers by 3.5 percent. (TFK, 2015).

The results shows that 50 (69.4) participants out of total 72 said that they have not decreased smoking after tax increase. Among them 26 (52%) said it is difficult to stop or decrease because they are addicted, 9 (18%) said it is not expensive and 15 (30%) said it gives pleasure so they did not decrease the amount. There are other factors that affect not to decrease smoking and in this study I focused on only these three factors. The majority, 26 (52%) said that they did not decrease smoking because it is difficult to stop because they are addicted to smoking. There is nicotine present in the tobacco which they get addicted to.

Smokers get addicted to cigarettes very quickly. When comparing our results to the 2014 survey of school-children in England, 53% of young people who had smoked for under one year say they would find it difficult to stop for one week compared to 85% for those who have smoked more than one year because of the addiction. The survey also found that 29% of regular smokers said that they wanted to give up smoking, while 56% reported that they had tried to give up.

According to the U.S Centre for Disease Control and Prevention (CDC), many smokers become addicted to nicotine, the drug that originates naturally in tobacco and more people are addicted to nicotine than any other drugs in the United States. (CDC, 2015)

It is difficult to reduce or stop smoking because nicotine withdrawal causes anxiety and stress, both of which are dominant reasons to take up smoking again. (Benowitz, 2010).

When it comes to number of cigarettes smoked before and after the tax increase, 6 (8.3%) participants said they smoke between 5 and 10 cigarettes per day, 44 (61.1%) said they smoke between 10 and 20 cigarettes per day and 22 (30.6%) said they smoke more than 20 cigarettes per day before the tax increase. After the tax increase, 23 (31.9%) participants said they smoke between 5 and 10 cigarettes per day, 32 (44.4%) said they smoke between 10 and 20 cigarettes per day and 17 (23.6%) said they smoke more than 20 cigarettes per day.

Even if the results shows there is decrease the in the numbers after tax increase, it only changed for the low income group. There is no major difference among the high income group. This can be seen in the comparison between Income level and those who decreased smoking after tax increase.

Finally, when it comes the relationship between income level and the amount of cigarette smoking, there is a strong relationship between income level and cigarette smoking. The chi-square test shows that there is a high significant relationship between income and cigarette consumption with a P value of <0.005.

To find out relationship, the income levels is grouped into two, high income and low income group. Low income group contain incomes less than MVR4000, between MVR4000 and MVR6000 and between MVR6000 and MVR8000. The high income group contains incomes between MVR8000 and MVR10000 and incomes more than MVR10000. From the results it has been found that there is a 2.5 times higher chance in decreasing cigarette consumption after increasing the taxation among the low income group compared to the high income group.

Low income smoker are likely to decrease or quit smoking as low-income smokers are already greatly concerned about money; it is believed that the additional cost for a pack of cigarettes could push them into quitting. It is believed that the financial burden will lead to cessation.

A study to determine the effect of taxes on cigarette consumption of low-income populations, evidently prove that tobacco excise taxes are a powerful tool for reducing tobacco use. Substantial escalations in tobacco taxes that increase tobacco product prices encourage current tobacco users to stop using, prevent potential users from taking up tobacco use, and reduce consumption among those that continue to use, with the greatest impact on the young and the poor. (Chaloupka, Yurekli, & Fong, 2012)

Low-income smokers are much more likely to quit because of state tobacco tax increases than higher income smokers. (TFK, 2011). In another research in U.S claim that in lower-income countries would be able to reduce youth cigarette consumption through tax policies that increase the price of cigarettes. (Kostova, Ross, Blecher, & Markowitz, 2012)

There are many researches proving that there is a relation between income and cigarette consumption. In survey done in U.S using data from the New York and national Adult Tobacco Surveys from 2010–2011, smoking prevalence is strongly associated with income (P<.001). (Matthew , James, & Kimberly , 2012)

When comparing our result to a study conducted in U.S, the increase in national cigarette taxes is almost three times as likely to affect low-income than high-income Americans. It will inspire many of the low income smokers to give up cigarettes and this would eventually save money for them. (Saad, 2009).

According to a survey done in New Zealand, low income will get a greater health benefit from the tax increase and 40% decreased their consumption per day after the tax increase in 2010-2011. (Laugesen, 2012)

Though there are many studies that prove taxes reduce smoking among the low income group, there are some studies contradicting those results. In a study done in U.S shows that they do not actually reduce and cigarette taxes severely burden poor smokers who do not quit, no matter how tax liability is weighed. (Remler, 2014)

5.2 Conclusion

The study shows that that increasing tobacco or cigarette taxes have not decreased the majority of the participant's cigarette consumption as the clearly majority (69.4%) of them said they did not decrease. Among the participants who said they decreased smoking after tax increase, the majority (72.7%) said that they decreased smoking due to it is expensive and among who said they did not decrease smoking after tax increase, the majority (52%) said it is difficult to stop or decrease because they are addicted.

The results shows there is decrease the in the numbers after tax increase, it only changed for the low income group. There is no major difference among the high income group. And the study shows that there is a strong relationship between income level and cigarette smoking.

5.3 Limitations of the study.

This is study contains quantitative data so the results are limited as they provide numerical descriptions rather than detailed narrative and generally provide less elaborate accounts of human perception and the research is often carried out in an unnatural, artificial environment so that a level of control can be applied to the exercise. In addition preset answers will not necessarily reflect how people really feel about a subject and in some cases might just be the closest match. And also the development of standard questions can lead to structural bias and false representation, where the data actually reflects the view of them instead of the participating subject.

This study focused to only some variables so there is chance for bias. If we increase the attended variables, the bias will be less. The study population is very less, therefore the accuracy is decreased and the time limit is not enough for conducting too reliable survey. Another limitation is that there is very limited secondary data available due to lack of studies.

Moreover the research is only focused on one island and also it is focused on a specific age group, as a result this study cannot be generalized to the whole population of Maldives.

5.4 Recommendations

1. The study population must be big enough to get an accurate result.

2. This is based only to one island; a wide study is needed to evaluate all the matters.

3. The study has to be conducted in different atolls and in entire Maldives (all-inclusive); hence the results can be generalized to whole Maldives.

5. Further studies need to be conducted to appraise the recent changes.

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Appendix

އިޤްރާރު

އަޅުގަނޑު މިސާވޭގައި ބައިވެރިމިވަނީ އެއްވެސް މަޖުބޫރުކަމެއްނެތި އަމިއްލަ އިޚްތިޔާރުގައެވެ. އަޅުގަނޑު ބޭނުންވެއްޖެނަމަ މިސާވޭ ފުރިހަމަނުކޮށް ނިންމާލެވިދާނެކަމާއި އަދި ބޭނުންނޫން ސުވާލަކަށް ޖަވާބުނުދީ ދޫކޮށްލެވިދާނެކަން ވަނީ މިސާވޭކުރާފަރާތުން އަޅުގަނޑަށް އޮޅުންފިލުވާދީފައެވެ.

އަދިމީގެ އިތުރުން މިސާވޭގައި އަޅުގަނޑާކުރެވޭ ސުވާލުތަކުގެ ސިއްރު ހިފެހެއްޓޭނެކަމާއި ސާވޭގެ ނަތީޖާގައި އެއްވެސް ފަރާތެއް މިސާވޭއަށް ދީފައިވާ ޖަވާބެއް އެފަރާތެއް ވަކިކުރަން އިނގޭނުހެން ނުހިމަނާނެކަންވެސް އަޅުގަނޑަ ވަނީ މިސާވޭކުރާފަރާތުން އަޅުގަނޑަށް އޮޅުންފިލުވައިދީފައެވެ.

މިހުރިހާ ކަމެއް އެނގުމުން އަޅުގަނޑު މިސާވޭއަށް ފުރިހަމަ އެއްބާރުލުންދިނުމަށް އިޤްރާރުވަމެވެ.

ނަން: . . . .

ސޮއި: . . . .

Questionnaire

Part One – Social demographic characteristics

Please tick (√) toward the most appropriate answer

1- **Age**: . . . .

2- Sex

(1) Female (2) Male

3- Marital Status

(1) Single (2) Married

4- Educational Level

(1) Primary Education (2) Secondary Education (3) Higher Secondary Education and above

Part Two - Occupation and income

5- Occupational Status

(1) Employed

(2) Unemployed

6- Income Level

(1) Less than 4000

(2) Between 4000 and 6000

(3) Between 6000 and 8000

(4) Between 8000 and 10000

(5) Above 10000

Part Three – Smoking behavior

7. At what age did you started smoking?

(1) Less than 12 (2) Between 12 and 15

(3) Between 15 and 18 (4) Above 18

8. How many cigarettes did you consume per day at that time?

(1) Less than 5

(2) Between 5 and 10

(3) Between 10 and 20

(4) More than 20

9. Did you decrease amount of cigarettes smoking after the increase in the taxation?

(1) Yes (2) No

10. If yes, what is the reason?

(1) Parents (Peer pressure) (2) Expensive

(3) Knowing the health impact (4) others (specify): . . . .
. . . .

11. If no, what is the reason?

(1) Difficult (addicted) (2) Not expensive (still affordable)

(3) Give pleasure (4) others (specify): . . . .
. . . .

12. How many cigarettes did you smoke per day before increase in the tobacco tax?

(1) Less than 5

(2) Between 5 and 10

(3) Between 10 and 20

(4) More than 20

13. How much money did you spend per month for cigarettes before increase in the tobacco tax?

(1) Less than 500

(2) Between 500 and 1000

(3) Between 1000 and 1500

(4) More than 1500

14. How many cigarettes did you smoke per day after increase in the tobacco tax?

(1) Less than 5 (2) between 5 and 10

(3) Between 10 and 20 (4) more than 20

15. How much money did you spend per month for cigarettes after increase in the tobacco tax?

(1) Less than 500 (2) between 500 and 1000

(3) Between 1000 and 1500 (4) more than 1500

16. Do you ever wanted to quit smoking or decrease?

(1) Yes (2) No

17. If yes, what is the reason?

(1) Parents (Peer pressure) (2) Expensive

(3) Knowing the health impact (4) others (specify): . . . .
. . . .

18. If no, what is the reason?

1) It relieves stress and relaxes (2) It is impossible

(3) Smoking is not a problem (4) others (specify): . . . .
. . . .

. . . . Thank You . . . .