

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of Research

Nowadays increased incidence of hypertension may have substantial health consequences, since hypertension is the leading risk factor for adult mortality in many developing countries (Lim, et al., 2013). For example, hypertension is the primary risk factor for the two top causes of death in Indonesia; stroke (21% of all deaths) and ischemic heart disease (9% of all deaths) (World Health Organization, 2010). Hypertension has a lot of factors, such as the rise of age, medical conditions, hormonal drugs, obesity, heredity and lifestyle (Siyad, 2011).

In Indonesia, there was public opinion related to goat meat contributed to high blood pressure. Factually, the less attention of sellers goat satay for the type of meat (between goat or sheep) occurred in society. Because lack of information either seller or consumer would mention it by goat satay even the lamb (Adiyastiti & Hendraningsih, 2017).

The selection of lamb is more acceptable than the goat meat because it has a softer texture and more savoury taste (Adiyastiti, 2017). At appropriate amounts, sheep is valuable sources of easily digestible protein and many essential micronutrients such as iron, zinc, calcium, vitamin A and vitamin B12 (Schönfeldt, et al., 2013). On the other side, lamb also has a high content of saturated fatty acids and cholesterol than goat meat (Ivanovic, et al., 2016)

Generally, people choose to eat lamb with the fat or in Indonesia language called by *gajih*. But, the consumption of fat beyond the limit would like to bring the adverse effect such as increased risk of cardiovascular disease (Siri-Tarino, et al., 2010) and also metabolic syndrome (Wiardani, et al., 2011). Based on the cooking method, grill is one of a favourite way selected to cook the lamb, and one example of the menu in Indonesia is

Satay (Triyannanto, et al., 2017). Gang Liu, a postdoctoral researcher from Harvard T.H. Chan School at 2018 proved that grilled or well-done beef, chicken or fish may risk the developing of high blood pressure among people eat this kind of foods regularly more than twice in a week (Liu, 2018).

The Indonesian people choose to process lamb by boiling method and have some great menu such as soup, curry, and *tongseng*. Boiled cooking method enhanced the in vitro digestibility and nutritional value of meat (Zhang, et al., 2014). but boiling for a long time removes large amounts of solutes nutrients (Lean, 2013).

One of the most common dishes eaten by Rasulullah was meat. The prophet mentions that meat as the most favourite food for people on earth and afterlife. The meat of camel, sheep, goat, and cattle was the most consumed in those days (Levent, 2017). The Holy Qur'an never refers to a meaningful cultural or religious distinction between goats and sheep. It strongly defends the equality of all animals provided by God as proper food (Al-Anfal/6: 143-146)

As Muslim, we should believe all the *syari'ah* statement is correct, and there is no hesitancy. Therefore, the perceptions that arise in the community must be validated. In this research focus to study the effects of cooking method (boiled and grilled) lamb and fat on blood pressure.

## **1.2 Formulation of the problem**

- Is there an effect of different cooking method of lamb and lamb fat on blood pressure?

## **1.3 Objective of research**

### **1.3.1 General Objective :**

Knowing the effect of lamb and fat with a different cooking method to the blood pressure

### **1.3.2 Specific Objectives :**

1. Analysing the effect of boiled lamb on blood pressure
2. Analysing the effect of boiled lamb and lamb fat on blood pressure
3. Analysing the effect of grilled lamb on blood pressure
4. Analysing the effect of grilled lamb and lamb fat on blood pressure
5. Analysing the best method for cooking lamb

## **1.4 Benefit of research**

### **1.4.1 For Community**

This research hopefully useful to show the honour of lamb as one of Prophet Muhammad ﷺ favourite dish and to show the public best method for cooking lamb.

### **1.4.2 For Institution**

Developing halal food research as Nutrition Department University of Darussalam Gontor's mission to become "Halal Food Study Centre" in 2030.

### **1.4.3 For Researcher**

This study improves the knowledge of the researcher about the relation between lamb and blood pressure.

## **1.5 Authenticity and Formers Research**

Research that has been carried out regarding the relationship between lamb fat and cooking method of lamb is still not available. Because limits of research from the previous study, the analysis toward goat meat on blood pressure assumed comparable with the lamb.

**Table 1. Authenticity and Former Research**

<b>No</b>	<b>Title</b>	<b>Variable and Design</b>	<b>Result</b>	<b>Difference</b>
1	“Goat meat does not increase the blood pressure” (Sunagawa <i>et al.</i> 2014)	Dependent Variable: Dahl/Iwai Rats Blood Pressure Independent variables : The control group (CP) fed a feed containing 20% of chicken and 0,3% salt on a dry matter basis. The goat meat/salt group (GS) fed a feed containing 20% goat meat and 3% to 4% salt. The Okinawan mugwort (Artemisia Princeps Pampan)/ salt group (GY) fed a feed contain 20% goat meat. 3% to 4% salt and 5% of freeze-dried mugwort powder Design: Experimental with the pre-post control group	These results indicated that chicken consumption prolonged consumption of goat meat did not cause increased blood pressure, preferably a large amount of salt used in the preparation of goat meat dishes is responsible for the increase in blood pressure	The independent variable did not discuss lamb fat and lamb cooking method

No	Title	Variable and Design	Result	Difference
2	“Preliminary Study On The Acute Effect Of Consuming Goat Meat On Blood Pressure And Blood Lipid Profile In Men And Women With Mild Hypertension (Marni S <i>et al.</i> 2016)	Dependent Variable: Men and Women’s Blood Pressure Independent Variable: Goat Meat Soup Design: Experimental with pre and post control group Design: Experimental with the pre-post control group	The results of this study proved that the consumption of goat meat did not cause an increased risk of blood pressure and cholesterol level.	The variable did not discuss the fat of the lamb
3	“ The Effect of Goat meat to the blood pressure” (Afid, 2016)	Dependent variable: Adult blood pressure Independent variable: Goat meat Satay Design: Experimental with the pre-post control group	There was a significant difference in average blood pressure before and after goat meat (Satay) consumption.	The independent variable only focus on the grilled cooking method

No	Title	Variable and Design	Result	Difference
4	Grilling and other high-temperature cooking may raise the risk of high blood pressure (Liu, 2018)	Dependent variable : Adult blood pressure Independent variable : Various method of cooking (grilled, roasted, broiled) of beef, fish, and chicken Design: Cohort Study	Grilled or well-done meat, chicken or fish may increase the risk of developing high blood pressure	The independent variable did not use the lamb