

THE INFLUENCE OF FEAR APPEAL MESSAGES ON  
CREATING AWARENESS OF STEM CELL THERAPY  
IN MALAYSIAN MARKET

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DEPARTMENT OF MARKETING

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A research project is submitted in partial fulfillment of the  
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## DECLARATION

We hereby declare that:

- (1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.
- (2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.
- (3) Equal contribution has been made by each group member in completing the research project.
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## **LIST OF ABBREVIATIONS**

UTAR	University Tunku Abdul Rahman
FBF	Faculty of Business and Finance
FICT	Faculty of Information and Communication Technology
FEGT	Faculty of Engineering and Green Technology
FS	Faculty of Science
FAS	Faculty of Arts & Social Science
CFS	Centre for Foundation Studies
SPSS	Software Package for Social Science
PT	Perceive threat
PB	Perceive benefit
PT	Perceive fatalism
PE	Perceive efficacy
SPSS	Statistical Packages for the Social Sciences

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## **ABSTRACT**

Stem cells therapy is a new treatment that gives hope to the hopeless illness. Thus, it is very important to introduce this new treatment to the public in order to increase their awareness about stem cells therapy.

This study attempts to investigate the influence of fear appeal message on creating awareness of stem cell therapy in Malaysian market. The hypothesize model was used to measure the relationship between awareness and other dimension such as fatalism, benefit, efficacy and threat.

The target population of this study is Malaysian who is 25 years-old and above, earning high or middle income and educated. Whereas, the target samples are parents or/and women who gave birth in the private hospital in Penang; people in Gurney Plaza Penang who are appears ages 25 years-old or above, earning high or middle income and educated; lecturers, tutors as well as staffs from University Tunku Abdul Rahman, Perak campus. Survey was conducted at three locations which included three private hospitals in Penang - Gleneagles Medical Centre Penang, Bukit Mertajam Specialist Hospital and Hospital Pantai Mutiara; Gurney Plaza Penang and UTAR Perak campus. 250 respondents from difference study locations were asked to participate and answer the questionnaires on the spot. Questionnaire response rate was 100%.

SPSS provide support to test the conceptual framework, descriptive analysis, scale measurement and inferential analysis have been used to analyze data. This research measures importance of each variable: Perceived threat, perceived benefits, perceived fatalism and perceived efficacy in creating awareness in people's mind.



Result of this study substantially contributes to theoretical and managerial understanding of the influence of fear appeal message on creating awareness of stem cell therapy in Malaysian market. Lastly, the result of this study shows that perceived benefit is positively influence.

## **CHAPTER 1: RESEARCH OVERVIEW**

### **1.0 Introduction**

This chapter provides an overview of the study context and explains the research problems. It consists of research objectives to be achieved, the research questions to be answered, and the hypotheses to be tested. It also shows significance of this study.

### **1.1 Research Background**

#### **1.1.1. Definition of Stem Cells**

Human stem cells are cells that produced by the original cells into a lot of new cells throughout a human being's life (Van Blerkom, 1994). Stem cells are undifferentiated cells that have the ability of self-renewal and the ability to differentiate into specified types of tissues that serve different function of a body. It means that the stem cells have the capability to grow into mature cells that have different shapes and functions, for example red blood cell, and muscle cell and nerve cells (Ruth & Lana, 2001). Stem cells have the ability to proliferate infinitely, self-replicate and differentiate into other types of cell; therefore it is suitable for the disease's therapy. As the cells can divide into various types of cells in a body as long as the organism is still alive in order to recover the injured part of a body or damage done from disease such as

Alzheimer's disease, diabetes disease and heart disease (Rockville& Maryland, 1999).

Stem cells can be divided into two characteristics. The first characteristic is the ability of the cells to differentiate into various types of cell that serve specified function of a body under certain condition, that call pluripotent cells. These cells only have a short period of time existence and then differentiate into more specified tissues in the body. Second characteristic is the capability of the cells to proliferate unlimited times throughout the lifetime of organism, named as multipotent cells (Jesse& Brenda, 2009). Multipotent cells are undifferentiated cells that have the ability for self-renewal within a long period of time and the ability to differentiate into specified tissues (Ian, 2010). Stem cells can be acquired from the embryo, the fetus and the adult (Ruth& Lana, 2001).

Because of the ability of regeneration and differentiation, stem cells can be used to cure the diseases such as Alzheimer's disease, Parkinson's disease, heart disease, and kidney failure. Stem cells can be further developed with clinical trial to discover new potential treatment to cure any chronic or killing diseases (Rockville& Maryland, 1999). For example, stem cells are being used to cure disease called multiple sclerosis (MS). MS is a disease that affects the body nervous system into disorder. The regenerative ability of stem cells can be used to cure MS as it can reproduce the patient's impaired immune system and give rise the damaged part with new cells that come from stem cells. The stem cells play a role to prevent the disease from deteriorating (Burt, 1998).

Stem cells therapy has become an argumentative topic currently (Priest, 2006) among the research scientists of the field and the publicity (De Wert& Mummery & Nisbet, 2003) and society; it raises the issue of awareness for this

new type of therapy because of its ability to cure killing disease (Agência & Critchley & Marques & Reis, 2008; Nisbet, 2004). However, doctors said that creating awareness of people about stem cells therapy is still a major issue to confront, due to its unknown benefits of stem cells therapy ([www.hindustantimes.com](http://www.hindustantimes.com)).

### **1.1.2 History of Stem Cell**

Stem cells, derived mostly from bone marrow and umbilical cord blood, have been used in research since the 1960s, with applications focused primarily on treatments for cancer (Matthew, 2004). In 1960's, stem cells were discovered by Canadian scientists named Ernest A. McCulloch and James E. Till. Since Till and McCulloch discovered stem cells there has been much advancement in the field. In 1968, doctors performed a highly experimental therapy where bone marrow was transfer between two siblings to treat Severe Combined Immunodeficiency. In 1978, haematopoietic stem cells are discovered in human cord blood. In 1981, mouse embryonic stem cells are derived from the inner cell mass by scientists Martin Evans, Matthew Kaufman, and Gail R. Martin. Gail Martin is attributed for coining the term "Embryonic Stem Cell". In 1992, neural stem cells are cultured in vitro as neurospheres. In 1997, Leukaemia is shown to originally come from a haematopoietic stem cell, which is the first direct evidence for cancer stem cells. In 1998, James Thomson and co-workers acquire the first human embryonic stem cell line at the University of Wisconsin-Madison ([www.public.iastate.edu](http://www.public.iastate.edu)).

Stem cells from human embryos were not separated for the first time until 1998. Unlike their adult tissue counterparts, embryonic stem cells are "undifferentiated," meaning these repair units of the human body have yet to

be programmed to be specific to the brain, the skin, the heart, the lungs, or other bodily tissues (Matthew, 2004).

### **1.1.3 Trend of Stem Cell in Malaysia**

Stem cell research is not that popular in Malaysia. Majority of the work until now has involved haemopoietic stem cells (bone marrow, peripheral blood and cord blood). As these are from adult issues, ethical concerns may be minimize since they are being used in the setting of haemopoietic stem cell transplantation. The use of sources of cells other than the adult stem cells such as cell lines or fertilized embryos is a major concern because it is likely that our local researchers will be conducting research in this area.

Hematopoietic stem cell transplantation (HSCT) was established in the Institute of Paediatrics in 1994 and in Subang Jaya Medical Center, Hospital Kuala Lumpur and Hospital Universiti Kebangsaan Malaysia in 1999. To date, 1382 patients were transplanted nationwide and registered with the Malaysian Blood and Marrow Transplant Registry with cumulative results that are as good as any well-known centers in the West. The numbers of patients treated with HSCT continue to rise over the past 20 years except in patients with chronic myeloid leukemia where the indication of HSCT has declined after 2006 due to the introduction of imatinib mesylate (Drug used to cure myeloid leukemia).

The widening scope of application of stem cells in therapy also drives medical institutions to strategise for the provision of these new services. Universiti Kebangsaan Malaysia (UKM) has taken the lead to establish a Cell Therapy Centre in UKM Medical Centre for these purposes in 2007. The Centre not

only has scientific goals, but also strives to be a coordinating center for the research and development of new therapeutic procedures employing cell therapy, a center for career development in the field of stem cell biology and cell therapy and a place for intensive international collaboration.

Recognizing the enormous potentials and significant impact of stem cell research and therapy to the country's health and economic development, the Ministry of Health of Malaysia in 2007 formulated the National Policy for Organ, Tissue and Cell Transplantation. In the following year, the National Standards for Cord Blood Banking and Transplantation, the National Guidelines for Haemopoietic Stem Cell Therapy and the National Guidelines for Stem Cell Research and Therapy have been drafted to promote, guide and regulate the practice of transplantation in Malaysia. A Stem Cell Oversight Committee will soon be established to ensure that stem cell research and therapy is reviewed at the national level and conforms to the highest ethical and scientific standards. The Committee shall include representatives from the general public and religious bodies, as well as those with expertise in stem cell biology and therapeutics, ethics, law, and social sciences (Fadilah, Leong & Cheong, 2008).

The following hospitals have the experience of stem cells transplantation; there are Department of Medicine, The Adult Hematology Unit, University Malaya Medical Centre, Kuala Lumpur, Malaysia, Subang Jaya Medical Centre, Kuala Lumpur, Malaysia, National University Hospital, Kuala Lumpur, Malaysia, Hospital Ampang, Kuala Lumpur, Malaysia and Institute Paediatric, Kuala Lumpur, Malaysia ([www.nature.com](http://www.nature.com)). The prices for each type of stem cells are different. For example, Cord Blood stem cells transplantation charges around RM 10,000 and Bone Marrow stem cells transplantation charges around RM 50, 000. The reason of Bone Marrow stem cells transplant charges

higher because the evaluation of Bone Marrow transplantation is a long journey, the risks and expenses are large. ([www.stemlife.com](http://www.stemlife.com)).

## 1.2 Problem Statement

Stem cells treatment is so amazing because of its ability to treat myriad of diseases. It gives new hope to cure the hopeless illness. There are a lot of countries ([mbbnet.umn.edu](http://mbbnet.umn.edu)) started the stem cells research and treatment for years. There is doubtless that the development of stem cells in term of knowledge and equipment is far better. For example China has achieved great advancement in stem cells research over the past 10 years. The stem cells journals published are the fifth largest in the world ([chinadaily.com.cn](http://chinadaily.com.cn)).

Stem cells functionality is still not being fully uncovered; its ability and potential to cure illnesses is waiting to be discovered (Louisa Lim, 2008). However there is a latest case about stem cell treatment. A man called Timothy Ray Brown who had suffered from the disease leukaemia and HIV received a bone marrow stem cells transplant in Berlin, Germany 2007. What surprised the scientists who are closely concerning Brown was that his HIV was gone. The doctors said he may be fully recovered from the HIV suffer since he have not been found any replicating virus. Stem cells treatment is so incredible that it is able to cure a fatal illness. Even though Brown case is so special but the scientists still state that the stem cells transplant is quite dangerous and can be fatal ([news.yahoo.com](http://news.yahoo.com)).

Bone marrow is the soft tissues inside our bones which is a rich source of stem cells. Bone marrow transplant happens when stem cells are removed from a healthy bone

marrow and transfer into damaged or destroyed bone marrow. The stem cells are new cells that give rise to all of the blood cells ([www.nlm.nih.gov](http://www.nlm.nih.gov)).

Stem cells therapy is considered as a new treatment that requires some evidence to justify its effectiveness. It is a long way to go before stem cells treatment come into patients' trials ([pharmabiz.com](http://pharmabiz.com)). However it gives promise to the future. Research and clinical trials are still necessary for stem cells treatment before recognize it worldwide as research conducted previously still do not know stem cells well.

Therefore it is no wonder that only little people around the world are aware of the effectiveness of the stem cells therapy that there are more than 70 evidences proved that stem cells from umbilical cord blood are effective to cure diseases over the 20 years ago ([stemcellresearchnews.net](http://stemcellresearchnews.net)).

In Malaysia, stem cells therapy is not common and only available in few hospitals. For example it is rarely to get any possible bone marrow transplant in Malaysia since the awareness of people is still at the very low level. There are only 17,120 registered donors (Stem cells that are removed from another person); the Malaysian Marrow Donors Registry is facing shortage currently (Institute of Medical Research, 2009). The stem cells treatment took a rather slow course in development despite the excitement of stem cells usage. Therefore some of the Malaysians are not even aware or have only little knowledge of this type of new treatment because the information can get about this therapy is quite limited.

With the increase use of stem cells therapy around the world, it is necessary to educate Malaysian about the benefits of using this new type of treatment. A trustworthy measurement to justify the effectiveness of fear appeal is needed promptly in order to increase the stem cells awareness among Malaysian.



## **1.3 Research Objectives**

### **1.3.1 General Objective**

To understand the effectiveness of fear appeal messages in creating awareness about stem cell in the Malaysian market.

### **1.3.2 Specific Objectives**

To determine the importance of each variable: Perceived threat, perceived benefits, fatalism and perceived efficacy in creating awareness in people's mind.

## **1.4 Research Questions**

### **1.4.1 General Question**

1. How do fear appeal messages create public's awareness toward health issues?

### **1.4.2 Specific Questions**

1. Is perceived threat has a positive significant impact on creating public awareness?
2. Is perceived efficacy has a positive significant impact on creating public awareness?
3. Is fatalism has a positive significant impact on creating public awareness?
4. Is benefit has a positive significant impact on creating public awareness?

## **1.5 Hypotheses of the Study**

Findings from previous research together with the objectives of the study lead to the development of the following hypotheses.

H1: Perceived threat of fear appeal can significantly raise public awareness.

H2: Perceived efficacy of fear appeal can significantly raise public awareness

H3: Perceived fatalism of fear appeal can significantly raise public awareness.

H4: Perceived benefit of fear appeal can significantly influence public awareness towards the usage of stem cell.

## **1.6 Significance of the Study**

This study is to provide an insight into how single dimensions of perceived threat, perceived efficacy, benefit and fatalism affect people awareness of their health concern. This research is done in order to find a way to introduce the stem cell therapy effectively to Malaysian and increase their health concerns.

## **1.7 Chapter Layout**

Chapter 1: Introduction

Chapter One includes a series of definition of stem cells, research background, stem cells trend, problem statement, general and specific objectives, research questions, hypotheses of the study, significance of the study, chapter layout and conclusion that explaining the purpose of the research.

Chapter 2: Literature Review

This chapter will be discussed on literature review which provides literature survey of the relevant information for the research topic. It describes the relationships for every independent and dependent variables. The research study reviews the relevant

theoretical models, and then they proposed the theoretical framework and hypotheses development.

### Chapter 3: Research Methodology

This chapter describes how the research study is carried out and gathers the data, by using the appropriate research design, data collection methods, sampling design, research instrument, construct measurement data processing and method of data analysis.

### Chapter 4: Research Result

Chapter four presents the patterns of the results and analyses of the results which are relevant to the research questions and hypotheses. It includes SBSS analysis.

### Chapter 5: Discussion and Conclusion

In this chapter, the research study summarizes the research findings which are included statistical analyses, discussions of major findings, implications of study, limitations of the study and recommendations for future research.

## **1.8 Conclusion**

In chapter one, it provides an overview of the research study. It presents the definition of stem cells, background of the study, the stem cells trend of the country, and identifies the problem statement of the study. Then the research study continued with research objective and questions. Besides that, hypotheses were formed and the significance of the study was focused on creating public awareness. A further review of the previous relevant studies and researches will be conducted in the next chapter.

## **Chapter 2: Literature Review**

### **2.0 Introduction**

In chapter 2, we will interpret more about the evaluation of secondary sources and advise the reader on the most pertinent part. Generally, the purpose of this chapter is to analyze critically on particular segment of a published body of knowledge through journals, articles, summary, classification and prior research studies. More than that, we will have a brief explanation on our dependable variable (DV) and also independent variable (IV).

### **2.1 Review of the literature: Dependent Variable**

#### **2.1.1 Awareness**

Awareness refers to a process that occurs as a result of the interaction of human's nervous system and its environment, whereby this processing results in a basic ability of the human to react to stimuli which noticed from the environment (cf. Kandell *et al.*, 2000; Bear et al., 2001; Brefczynski and DeYoe, 1999; Farah, 1997). Besides that, awareness can be refers to as a process where users conscious with each other's activities on the premise of co-presence. For an example, perception or thinking appear in users mind might be "What are they doing?" or "Where are they working?", (Paletta & Herrero, 2009). Hence, awareness is similar or related with terms like

consciousness, feeling, perception, and cognition (Robert, 2007). The concept of awareness can be measure by knowledge (Baker & Brown, 1984). Besides that, awareness can also be measure by consciousness because it associates with the terms like awareness, cognition, perception and feeling (Robert, 2007). Therefore, awareness measurement is comprises two dimension which are consciousness and knowledge.

### **2.1.1.1 Measurement of Awareness**

#### **Consciousness**

The Random House Dictionary (1987) defines the word conscious as aware of one's own existence, thoughts, surroundings, fully aware of or sensitive to something, aware of what one is doing, inwardly sensible of wrongdoing. Similarly, Random House defines consciousness as the state of being aware, awareness, and full activity of the mind. On the other hand, consciousness can be refers to the capacity to experience oneself as a being subject to the past, present, and future, including the reflection on oneself as a being that is aware of its surrounding environment (cf. Roth, 2000; Lycan, 1995; Humphrey, 1998).

#### **Knowledge**

It refers to certain information or understanding and skills that we gain through education or experience (Hornby, 2000). Around year of 400 BC, Plato, one of the most famous Greek philosophers has state that knowledge consists of truth, belief, and justification. That is, to be called knowledge, a proposition must be true. One of the element needed to qualify a statement as knowledge is evidence that one's belief in the truth and validity of the statement is justified. In other words, we must be able to show data to verify or prove the claim (Michelle & Patricia, 2001).

## 2.2 Independent Variable

### 2.2.1 Perceived Threat

Threat is defined as a vicious factor, whether an individual or an organization, with a specific political, social, or personal issues or mission and some level of capability and intention to fight against an established government, a private organization, or an accepted social index. The goal of a threat is considered to be the threat's overall intent. The end-result of the threat is trying to achieve something which is subverted to the leading of political party. In contrast, a threat's objective is simply a goal, such as a specific mission, that must be made or finish to progress toward the goal (David, Sherry, Cynthia & Laura, 2007).

Besides that, a threat is an appeal to afraid or fear, a conversation stimulus that attempts to arouse a fear response by showing some type of outcome that the audience wants to avoid (Michael & Herbert, 1997). In fact, threats have been shown things go contrary to one's wishes or create a boomerang effect. Witte (1992a, 1994) points out that although threats are needed to get people to take action, threats perceived as too high can create such impassable levels of fear in the individual that he or she will consume energy to rationalize away the fear (e.g., "I'm not like others, I have complete control over my eating behaviors") rather than take action to avoid the danger (e.g., "I'm going to seek treatment").

As defined by Witte (1992), a threat is an external stimulus that exists whether or not it is perceived by an individual. If an individual perceives the threat, that individual can be described as having attention with a threat. A properly



constructed fear appeal not only serves to induce cognitions that a threat exists but also serves to convey the severity of the threat and its target population's susceptibility to the threat (Rogers 1975; Witte 1992). From this message, an individual is able to formulate perceived threat severity and perceived threat susceptibility (Rogers 1975; Witte 1992; Witte et al. 1996). In other words, once an individual is conscious of a threat, he or she will establish beliefs as to the seriousness of the threat and probability of personally experiencing the threat.

More on that, perceived threat is the combination of feeling personally at risk for harm such as susceptibility and believing the harm or damage could have serious consequences such as severity (Victoria, Celette, Usha, Susan, Brian , Patrick, Monahan & Joanne, 2004). Hence, threat can be measure by two dimensions which are susceptibility and severity.

### **2.2.2 Perceived Efficacy**

Perceived efficacy is defined by Protection Motivation Theory (PMT) to include both perceived self-efficacy ('do I have the ability to perform the suggested response') and perceived response efficacy ('can I believe the recommended response can avoid the threat'). PMT suggest that given sufficiently high efficacy, the individual will engage in the appropriate behaviour; if efficacy is insufficient, the individual will not engage in the behaviour (Sandra & Neville, 2006). Strong beliefs in self efficacy and response efficacy will arouse the motivation to protect oneself and one's property and result in a change in the adoption rate of risk reduction behaviours (Holly & Ingrid, 2006).

Self-efficacy refers to the person's belief or perception that he or she has the ability to perform the recommended attitude (Lauren & Punam, 1997). According to Mimi (2002), one can measure self-efficacy at different levels of

specificity. Bandura (1997) stated that the optimal level of generality at which self-efficacy is assessed varies depending on what one seeks to predict and the degree of foreknowledge of the situational demands" (p. 49). Bandura (1977) proposed the theory of self-efficacy of its applicability has been tested widely in many disparate areas. Researchers have consistently stated that perceptions of self-efficacy, or beliefs in one's own abilities to realize desired outcomes, play a critical role in determining people's subsequent functioning, adaptation, and attainments (Bandura, 1995, 1997).

Besides that, self-efficacy can also be refers as perceptions of one's ability to carry out the coping response, may be the most important dimension for some situations, especially in situation where the perceived possibility of the threat is "very real", or omnipresent, such as women's fear of rape (Robin, Michael & Sare, 1999). According to Robin, Michael and Sara (1999), Leventhal, Watts and Pagano, 1967; Sutton and Eiser, (1984) stated that research supports the notion that self-efficacy is important in gaining adoption of a coping response. More than that, one's feelings of self-efficacy are influenced by three factors which are actual experience, which would be related previous product usage, vicarious experience, and verbal persuasion, as in the advertisement itself.

Response efficacy refers to the person's belief that the recommended behaviours are effective in reducing or eliminating the danger. Evaluation of response efficacy is considered to be a acknowledge process, whereby individuals form thoughts as to the effectiveness of a recommended response's ability to avoid a threat (Witte 1992). Ultimately, it is their conscious of response efficacy that will determine the manner in which they choose to address the threat (Rogers 1983). According to Protection Motivation Theory, moderate to high levels of response efficacy are associated with positive

tendency of threat mitigation whereby a recommended response is enacted. For example, doctors recommend that women perform monthly breast self-examinations to detect abnormalities (high response efficacy). However, the woman must believe that she can do the examination correctly and determine a problem (high self-efficacy). If the woman doubts her ability to do a self-examination (low self-efficacy), compliance will be low (Lauren & Punam, 1997).

### **2.2.3 Perceived Fatalism**

Fatalism is identified as a concept of fate, a philosophical concept held by individuals who perceive that all events or things are fated to happen and that human beings have no control over their futures and are unable to change their results (Corsini, 1999; Franklin et al., 2007).

According to Rotter (1966), fatalism is a generalized expectation that outcomes of situations are determined by forces external to one's self, such as powerful others, luck, fate, or chance. Fatalism is therefore a belief in an external locus of control over the events in one's life. Rotter, Chance, and Phares (1972) and others (Jessor, Graves, Hanson, & Jessor, 1968; Kohn, 1972, 1974; Wheaton, 1980) view fatalism as acknowledge orientations learned through social interaction. Through socialization and experience, a person learns that his or her personal efforts are generally likely or unlikely to affect the results of a situation. Continual experience of failure in the face of effort has been found to lead to an external locus of control, characterized by passivity and giving up (Dohrenwend & Dohrenwend, 1970).

Besides that, fatalism is the belief that certain circumstances, such as illnesses or disastrous events, occur because of a higher power (such as God), or they are just meant to happen, and cannot be prevented. More than that, fatalistic

beliefs may cause psychological distress to people because they destroy both the desire and the ability to deal with life's problems or issues (Wheaton, 1980; Pearlin & Schooler, 1978). A person who feels that working toward a goal is useless and that life's stresses and strains can be undertaken but not overcome does not make an effort to solve them, is relatively unaware of things in the natural and social environment that can be founded, does not invest in the development of skills or in the accumulation of resources that could be useful in difficult situations, does not use his or her energy and creativity to prepare for or avoid similar problems in the future, and is not motivated to learn new methods to problem-solving (Catherine, John & William, 1983).

According to Hornby (2000), fatalism can be measured by fact and fate. Fact refers to the fact of accepting that we cannot prevent something from happening whereas fate refers to the belief that all events are decided by fate and that we cannot control them.

#### **2.2.4 Perceived Benefit**

Specifically, no literature could be found that attempted to measure perceived benefits. Perceived benefits are the outcomes associated with integration that is valued by individuals and organization. Benefits are different from reasons although the two are often the same. For examples, customer service, competitive advantage, lower costs.

Benefits were originally perceived as a multidimensional term. The results from integration evaluation suggested that benefits were multidimensional constructs that consisted of at least six dimensions (Lester, 2003).

**Strategic Benefits**

Strategic benefits consist of six items which are new opportunities, reputation and prestige, leverage size, marketing, competitive advantage, and empower employees. It should be obvious that these are business benefits. These particular items are possible although not necessarily automatic benefits. In organization perspective, organizations must enact policies and actively pursue these benefits.

**Economic Benefits**

Cost savings or economic advantages are the set of primary benefits that typically first come to mind when one talks with people about the benefits of integration.

**Enabled Benefits**

Enabled benefits are those benefits made possible by integration. They include standard business practices, better processes and business practices, improved overall understanding of the organization, and an improved work environment.

**Data Use Benefits**

The data use dimension is the complement of the data-handling dimension of the attributes construct. Since an integrated system is expected to manage data in a given way, it stands to reason that associated benefits should be expected. People perceptions of this dimension are timely data, accurate data, meaningful data, and non-duplicated data.

**Support Benefits**

All computer applications require support. People perceived that integration improved support in three ways which are the systems was easier to support, software upgrades were easier, and it was easier to train staff.

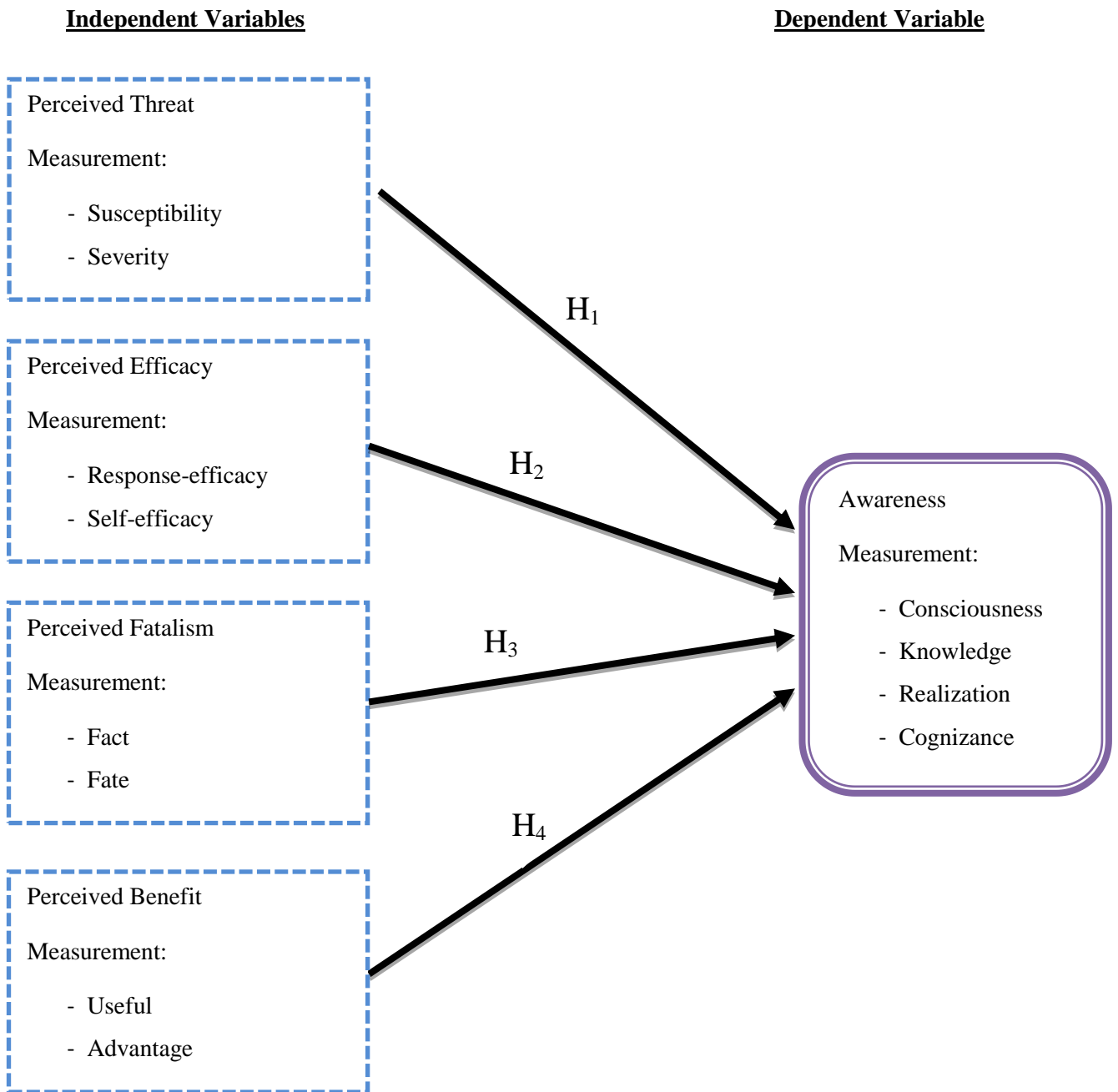
### **Functionality Benefits**

Basic business benefits that flow from integration are those that enhance routine operations and provide additional or improved functionality. For this dimension, people thought following these are important: (1) Efficiency, (2) new functionality, (3) operational improvements, and (4) customer service. Clearly, all of these items can affect functionality in a positive manner.

Benefit were measure by two dimensions which are useful and advantage. Useful is defined as something that can be used for some practical purpose, serviceable or helpful whereas advantage refers to certain situation or circumstances that gives one superiority or success especially when competing with others (Hornby, 2000).

### 2.3 Proposed Conceptual Framework

Figure 2.3.1: Hypothesize model of the influence of fear appeal message on creating awareness of stem cell therapy in Malaysian market.



Adapted from: Victoria, Celette, USHA, Susan, R.Brain, Patrick, Joanne (2004).

### 2.3.1 Perceived Threat

Past studies suggested that fear appeal is used to figure out the role of fear in determining the effectiveness of advertising when using fear appeal and also influence the consumer behavior towards fear appeals (Arthur & Quester, 2004, Witte, 1992, 1994).

Previous studies defined fear as the feeling of scare, anxious, worry, uncomfortable and also the rating of concerns and threats (LaTour & Tanner, 2003, LaTour & Rotfeld, 1997, Henthorne & LaTour & Natarajan, 1993, Rogers, 1983). Therefore fear is effective to induce consumer to take actions to minimize or avert these type of uncomfortable feeling (anxious, worry, scare) that may threaten their lives or health. Belch (2004) also mentioned that the use of fear is one of the appeals (others are Eg. humour and self-idealisation) that are being utilized in advertising activities and promotion tools to influence or change consumer behaviours.

Witte (1992, 1994, 1998) stated that people like to measure the risk of exposing to threat against actions that can avert or deter the threat. According to Leventhal's fear control framework, the Extended Parallel Process Model (EPPM) is the modification of previous fear appeal framework (Janis, 1967; Leventhal, 1971, Rogers, 1975&1983, Witte, 1992). EPPM defined threat that induces actions and perceived efficacy plays a role to guide the action whether it is on the right track to control dangers or fears. Witte (1992, 1994, 1998) further explained the Parallel Process Model with the new assessment of perception of severity, susceptibility, response efficacy and self-efficacy.

Witte (1992) further explained that a good fear appeal is not only to spread the existence of threat but also serves to deliver the severity of the threat and its target population's susceptibility to the threat (Roger, 1975)



Arthur and Quester's (2004) research reported that there is a positive relationship between susceptibility and fear. The findings concluded fear is an emotional response to a stimulus and which also supports Witte's (1992, 1998) study that suggested people will measure the risk of perceived threat, if the perceived threat is considered as moderate or high, it results in fear. Witte (1998) continued to explain when the perceived threat is high; it motivates the responses such as behaviour change, intention and attitude that confront the threats faced.

These findings supported the theory that indicate the higher a fear appeal, the more persuasion it motivates action change and finally perception (LaTour & Tanner, 2003, Snipes & LaTour&Bliss, 1999, Donovan & Jalleh & Henley, 1999, LaTour & Rotfeld, 1997, LaTour & Snipes&Bliss, 1996, Henthorne & LaTour & Nataraajan, 1993). Arthur and Quester (2004) also suggested that susceptibility affect the behavioural change.

Fear appeal is a strong persuasion to improve knowledge (awareness) and affect attitude change and behavioural intent, while the susceptibility of the threat also strongly influences the people behaviour. When people are being threatened by fear, they tend to take actions to avert or minimize the threat. From this perspective, the more fear, the more persuasion it motivates individuals to take adaptive responses.

**H1: Perceived threat of fear appeal can significantly increase awareness.**

### 2.3.2 Perceived Efficacy

Past study of Witte (1994) proposed that there are two types of efficacy (1) response efficacy is defined as the extent to which people believe the behavioural intent to be useful in minimizing a threat (2) self-efficacy is defined as the extent to which people believe themselves are able to perform the behavioural intent by their own. This perceived efficacy will finally result in adaptive behaviour (increase awareness).

Rogers's (1975) research has developed a theory called protection motivation theory (PMT) which is formed based on the Leventhal's parallel process model. The theory explained the processes in dealing with a threat which are perceived susceptibility, perceived severity, and response efficacy. Roger (1983) further identified one more process called self-efficacy and included it into his PMT. Rogers suggested response efficacy is oneself belief that a recommended response can avoid the threat and self-efficacy is oneself belief in themselves ability to perform the adaptive change.

Response efficacy involved the cognition process as it may turn into individual's perception that recommended response can effectively avoid the threat (Witte, 1992). Finally, their cognitions of response efficacy decide how they react to choose to confront with the threat (Rogers, 1983). According to protection motivation theory (PMT), moderate to high levels of response efficacy are correlated with moderate to high levels of perceived threats; therefore individual can only feel the threats and respond with attitude change (increase awareness) and behavioural intent to reduce or avoid the threats.

Once individuals have adopted the response efficacy in mind, they will also evaluate their own abilities (self-efficacy) to undertake the proposed response (Maddux & Rogers 1983; Witte 1992). Maddux and Rogers's (1983) and Rogers's (1983) past studies clarified that self-efficacy plays the role as an

indicator of intent (increase awareness) regarding a proposed response to confront the threat.

**H2: Perceived efficacy of fear appeal can significantly increase awareness.**

### **2.3.3 Perceived Fatalism**

There is no past literature review studying about the relationship of fatalism with the stem cells treatment. Most of the studies focused on the cancer fatalism associated with the mammography screening. However these past studies reviewed that fatalism did affect a person perception to take action to improve their health behaviour.

Powe (1995) defined the fatalism as the belief that death can be avoided when an individual has cancer. The diagnosis of cancer associated a person powerlessness or helplessness (Power, 1996). This finding is correlated with the past findings of Moy et al; Russell et al (N/D).

Recent studies posited that cancer fatalism deter the individual to go for a cancer mammography (Mayo et al., 2002; Powe, 1992). This support the Powe and Finnie (2003) research stated that vulnerable population always interpret cancer as fatal disease. Powe, Daniels and Finnie (2005) further explained that health care officer conceived that patients have generally low perception of cancer fatalism and the patients are permissive to the cancer. This can lead to the poor communication between the patient and the health care officer. The factor that can overcome these barriers is to increase the knowledge and awareness of patients, knowledge and trust about coping responses and perceived efficacy about for their own health (Ahmed, Fort, Elzey, & Bailey,

2004). Champion (1993) suggested that these types of motivations can increase patients' awareness and improve their health.

### **H3: Perceived fatalism of fear appeal can significantly increase awareness**

#### **2.3.4 Perceived Benefit**

Past research suggested that perceived benefits from action are associated in the fear arousal that also results in the perceptions of threat and low self-efficacy (Peterson, Witte, Enkerlin- Hoeflich, Espericueta, Flora, Florey, Loughran & Stuart, 1994; Witte, 1992). If individual perceives benefits to stem cells treatment and believes he or she believes in their own ability to enhance knowledge about stem cells, their fear about fatal diseases should reduce. Therefore perceived benefit is useful in increasing awareness. In other words, perceived benefit is the belief in the benefits of therapy (Powe, 1996).

Frank and Swedmark (2004) proposed that individual who perceive a benefit from early detection are more willing to take actions to avoid or reduce the threats compared to those who do not see the benefit of detection. Awareness can be enhanced once the individual perceives the benefit of stem cells treatment.

Graham (2002) stated on the importance of perceived benefit on early detection as it can prevent or reduce the threat of disease once it has been identified. Perceived benefits can positively motivate individuals to perform the early detection (enhance knowledge and increase awareness) that they are

not used to be. Glanz, Lewis and Rimer (1997) encouraged to use the health behaviour theory to increase the awareness of health promotion programs.

According to Rosenstock's (1974) study, if a person would like to take action to avert the illness, he or she has to believe that the undertaken recommendations could effectively minimize or prevent his or her perceived threat of a fatal illness. This finding is same to the past literature that indicate the Health Belief Model is effective for creating the awareness of health-related behaviours (Rosenstock, 1974; Steers, Elliott, Nemiro, Ditman, & Oskamp, 1996) such as breast cancer screening (Ashing-Giwa, 1999); fertility control (Eisen, Zellman, & McAlister, 1992); HIV-related sexual behaviors (Dobe, 1994; Lux & Petosa, 1994; Petosa & Wessinger, 1990), and decisions to seek care (Kirscht, 1974).

**H4: Perceived benefit of fear appeal can significantly increase awareness towards the usage of stem cell.**

## 2.4 Hypotheses

Recent research evidence suggests that the four dimensions of fear message appeal can make significant contribution to create people awareness (Powe, 1996). It shows a linear relationship that is the greater fear, the greater persuasion (Boster & Mongeau, 1984; Rotfeld, 1988; Sutton, 1982, 1992).

Witte, 1994 defined threat as a harmful thing that long exists in the environment with or without knowledge of the target audience. Fear appeal is used to threaten the target audience with the awful outcome (e.g. death or physical harm) if the target audience is not willing or failing to follow the recommended response. To avert this harmful

consequence from happening, the target audience will adjust to the behaviour change in order to reduce fear.

There are several studies pointed out that the perceived efficacy can result in the people's behaviour change (Floyd et al., 2000; Mongeau, 1998; Witte & Allen, 2000). People who believed that an action to respond to the danger control processes can effectively reduce the perceived fear (Witte, 1992, 1993); people who concern for self-efficacy are also attempt to increase self awareness of the fear in order to respond to the behaviour change.

Perceived benefit has a positive association with the self-efficacy. Perceived benefit is defined as the perception of benefit gained from undergoing the recommended action (e.g. receiving cancer treatment). This perception of benefit works best with self-efficacy together to help target audience to reduce the fear encountered (Powe, 1995). Fatalism is defined as the critical threat that may harm the target audience badly (e.g. death). Perceived benefit is somewhat used to decrease fear while fatalism is about questioning the benefit gained whether the treatment can help to cure the disease (Powe, 1996).

Awareness: Powe (1996) suggested that the effectiveness of fear appeal significantly affects the prospects' perceived awareness. Focusing on perceived awareness, there are four dimensions identified to measure the dependent variables based on perceived consciousness, available knowledge, self realization and cognizance (Berkowitz & Daniels, 1964; George, N/D). The four dimensions mentioned are used to justify the perceived awareness level whether it is significant or not significant.

**H1: Perceived threat of fear appeal can significantly raise public awareness.**

Perceived Threat: recent studies support that fear arousal from threat can motivate a person to take notice and therefore try to take action to avoid (Hovland et al.'s fear-as-

acquired drive model,<sup>19</sup> Janis's family of curves,<sup>20</sup> and McGuire's nonmonotonic models support this statement).

**H2: Perceived efficacy of fear appeal can significantly raise public awareness.**

Perceived Efficacy: research suggested that a person self efficacy can influence the people to change attitude because of the effect of fear (Anderson, 2000; Girandola, 2000; Ruiter, Abraham, & Kok, 2001; S. L. Smith, 1997; Snipes, LaTour, & Bliss, 1999).

**H3: Perceived fatalism of fear appeal can significantly raise public awareness.**

Fatalism: fatalism provides the greatest fear to the people and then motivates the people to adapt behaviour change in health (willing to accept new treatment). Champion and Miller (1996) and Champion (1994) proposed that the worry of cancer is a fatal threat to human being and therefore any new hope of solution is feasible (Blumberg, 2000; de Turck, Goldhaber, Richetto, & Young, 1992; Donovan, 1991; Snipes et al., 1999; Witte, Berkowitz, Cameron, & McKeon, 1998).

**H4: Perceived benefit of fear appeal can significantly influence public awareness towards the usage of stem cell.**

Benefit: research supported that perceived benefit from action can influence people to change attitude into a positive way. Benefit will help to decrease the fear barriers to know and lead to physical action (Peterson, Witte, Enkerlin-Hoeflich, Espericueta, Flora, Florey, Loughran, & Stuart, 1994; Witte, 1992).

## **CHAPTER 3: METHODOLOGY**

### **3.0 Introduction**

In Chapter 3, we are going to discuss about how the study conduct in term of research design, what data collection methods used, what is the sampling design, operational definitions of constructs, measurement scales, and data analysis methods. This study will begin with specifying which research design and approach that we are going to conduct in order to achieve the objectives and solve the problems detected.

### **3.1 Research Design**

A research design is the detailed blueprint used to guide a research study towards its objective (Aeker, Kumar and Day, 2007). It specifies the details of procedures necessary for obtaining the information needed to structure and/or solve marketing research problems (Malhotra, 2002). In other words, the research design will specify the details of implementing the research approach that has been developed in solving the research on hand.

The research design of this study is quantitative research. Quantitative research is to determine the relationship between IVs and DV and how each of the IV affects the DV. Quantitative research has 2 types, which are descriptive or experimental. In this study, descriptive research was our study's research design.



In this descriptive research study, we are going to address who, when, where and how questions regarding how well Malaysian aware of stem cell treatment as well as how effective fear appeal messages can influence people attitude, behavior and intention to adopt, purchase or use of stem cell treatment in Malaysia.

Descriptive research is always the popular or familiar types of research design that used by most researchers in their research study regarding public health campaign, anti-smoking film (Carol and Thomas, 2008) or anti-drinking campaign, increase awareness of breast-cancer mammography, AIDS prevention, cancer screening and etc. (Michel, Roy, Zhang, Frank, 2001, Victoria, Celette, Usha, Susan, R.Brian, Patrick, Joanne, 2004, Verma, 2009, Karen & Mary, n.d.).

Basically, descriptive research has been considered as popular uses study design in study of health research. For example, Karen and Mary (n.d.) studied “the effects of short-term cosmetic versus long-term health fear appeals in anti-smoking advertisement on the smoking behavior of adolescents”. Karen and Mary used the questionnaire as the study design tools to collect information. They distributed the questionnaire and asked students to complete a first stage of questionnaire at the beginning of the semester and a follow-up questionnaire at the end of the semester assessing student’s smoking attitude and behavior. Meanwhile, Sanjeev Verma (2009) was studied whether all the advertising appeals (such as rational and emotional appeals and etc.) can influence consumer purchase decision. Verma has used questionnaire as the data collection methods to collect the information from respondents.

Questionnaire is mostly used by most researchers in order to obtain opinions from target respondents without bias. Experimental study design is also used by researchers in health campaign, program and etc., but it has the limitation, that is, it may occur experimental biases during the experiment conducting because of the outside

variables are not controlled. Therefore, survey questionnaire is the most effective way to adopt in measuring or study of health research as well as effective in measuring the level of awareness of stem cell treatment in Malaysia.

### **3.2 Data Collection Methods**

In this study, the data collection method that we used is distributing questionnaire to target respondents. Survey questionnaire is one type of the primary data. Primary data is the data that considered first-hand information obtained, collected or observed from the researcher to achieve the objective of the study or to solve current issues. Questionnaire was used as data collection methods in this study is because the data or information obtained or collected from respondents are directly from their personal opinion and how they perceive, responses or react to the questions being asked. Most of the information or data collected from respondents are unbiased. Respondent's opinions are very useful and helpful for our study in order to achieve objective and solve current problem/ problems or issues.

### **3.3 Target Population**

According to The American Heritage Science Dictionary (2005), it defined population as "a group of individuals of the same species occupying a particular geographic area." Therefore the target population in this study is Malaysian who is 25 years old and above, educated and earning high or middle income.

Since there is no limit in creating awareness in the existence of an effective health product, Malaysian between the ages 25 or above can be targeted. This is the generations that are knowledgeable and well aware of the latest trend of technologies in the market. They are also recognized as early adopters which have the willingness to try on new product in the market. Another reason for choosing Malaysian who is 25 years old and above as target population is because normally majority of the college or university students in Malaysia graduated at 23 years old and start to work once they graduated. After 2 or 3 years of working, these individuals might earn high or middle income, so they will start to save the money for future uses. Therefore, they might become the potential customer as well as have the ability to adopt the stem cell therapy in the future because of their high or middle income earning. For those who already have their family and kids, they are also qualifying as target population in this study because they might earn high or middle income, interest in stem cell therapy as well as they might need some protection or guarantees for their kids or family members in term of their health.

The target population must be educated because the understanding of certain biomedical words or terms regarding stem cell is needed. For example, if the individuals is not educated or have low level of education, they might not able to cope with the information delivered. Moreover, less educated people are normally earning low income due to their level of education and qualification, so they are not qualifying as target population whereas if the individuals is highly educated or educated, they might aware of the existence of stem cell and have some knowledge about stem cell and they might earning high or middle income as well.

Individuals that earning high or middle income has the high buying power and spending power if compare to those earning low income. High or middle income individuals have the ability to spend on expensive or luxury things, however, low

income individuals is difficult to do so. Therefore, level of income is also one of the major attribute that can influence the adoption of the stem cell treatment in Malaysia.

### **3.3.1 Target Samples**

Target sample in this study are parents or/and women who gave birth in the private hospital in Penang, UTAR lecturers, tutors and staffs from difference faculty which include Faculty of Business and Finance (FBF), Faculty of Information & Communication Technology (FICT), Faculty of Engineering and Green Technology (FEGT), Faculty of Science (FS), Faculty of Arts & Social Science (FAS) and Centre for Foundation Studies (CFS). Other than that, people in Gurney Plaza Penang who are qualify (in term of age, income, education level) to be our questionnaire respondents are also one of the target samples for this study.

Patients that stay in private hospital majority of them are wealthy, since they are able to afford the expensive fees in staying in private hospital. Therefore, most of the patients stays in private hospital are considered as wealthy person. For this study, level of income is one of the attributes to measure whether the person are qualifies as our respondents. Besides that, most of the parents definitely will very care about their baby and family members, so they will need some protection or guarantees in term of health treatment, health insurance or life insurance or something that can protect their baby and family members from unnecessary health problem happen.

Whereas for UTAR's lecturers, tutors and staffs, they are also having their family, care about both themselves and their family members' health, so they

will try to seek out latest technologies or other protection that can protect them from unnecessary health issues happen. Moreover, lecturers, tutors and staffs that working in UTAR basically are earning middle or high income and educated due to their professional work and skills, therefore they are very suitable and qualified as our study target samples.

Individuals that we approached in somewhere around Gurney Plaza Penang are also qualified as target sample because they are appeared ages 25 or above, educated and earning high or middle income. Most of the office workers will go there shopping and buy branded, exclusive international brands, therefore most of them are appeared as earning middle or high income. So, they are being selected as our target sample in study.

### **3.4 Sampling Design**

Sampling design for this study is to define the population, after that determine the sample. After the sample is determine, we have to select the most appropriate sampling technique(s) in order to determine the sample and its size. We have used quota sampling as well as judgmental sampling to identify our target samples.

Overall, there are some difficulties that occur throughout the sampling design process. The major difficulty that we faced is resource constraint. Stem cell treatment is actually quite new in Malaysia. There is not much promoting on this treatment, government as well as private hospital or research laboratory did not fully adopt this treatment in Malaysia. Therefore, it is very difficult to get information regarding the stem cell treatment in Malaysia. Resources or information that we get or refer to, most of them are from other countries such as Germany, India, China and etc. The

information that we look for is on how they adopt the stem cell in their country, how well they are doing in this field, how they promoting this treatment to the public and so on so forth. However, in order to achieve the objective of this study, we interviewed some doctors that specialize in stem cell research in order to get some information regarding the current stage of stem cell treatment in Malaysia.

Other than that, language constraint also a limitation in this study because once individuals that do not understand the languages communicate to them, they will try to ignore, not willing to answer the questionnaire or just simply provide bias answers. For instance, when we are conducting survey, some respondents not understand the questionnaire that written in English. Therefore, we need to explain to the respondents with the language that respondent prefer. It will increase the time consuming per respondents. Lastly, some respondents are not even known what stem cell is mainly about. So, our members need to briefly explain to the respondent one by one. It also cause the survey duration longer and waste a lot of time.

### **3.4.1 Sampling Technique**

The sampling technique used in selecting target survey respondents is nonprobability sampling technique. Nonprobability sampling technique consists of 4 types. One of the nonprobability sampling techniques is quota sampling. It is adopted in this study because it may be viewed as two-stage restricted judgmental sampling.

There are several private hospitals in Penang, so we use quota sampling technique to divide the private hospitals in Penang into two classes which are high and middle class. We are based on judgmental sampling to judge on

which private hospitals are consider high or middle class according to the reputation of the hospital, advance facilities provided, quality services delivered, medical awards achieved, certifications as well as hospital accreditations and etc. As the result, we selected the three high class private hospitals which are Gleneagles Medical Centre Penang, Bukit Mertajam Specialist Hospital and Hospital Pantai Mutiara. After the process of the dividing into three high class private hospital, then only we start to approach the patients.

We are also used quota sampling in selecting target respondents in UTAR Perak Campus. We divided UTAR into difference faculties then only from these faculties using judgmental sampling to judge which UTAR lecturers, tutors and staffs are qualify and then we only approached them when they are in the room or in faculty office, for those who are not in the room, they are approached later.

Lastly, we used judgmental sampling to select our respondents in Gurney Plaza in Penang. Shopping mall is public area. We cannot simply approach a person without any judgment in term of their outlook, accessories they wearing or use and etc. Therefore, we will first ask the respondent some question regarding their household income or disposable income and whether they know about the existences of stem cells treatment before they are selected as our target survey respondent.

### **3.4.2 Sampling Size**

250 respondents are selected as the target sample size in this study. 250 respondents are the most appropriate amount of survey respondent for our study due to time and other resources constraint. If the sample size too small, there will not be effective in measuring the samples, therefore the result will not reliable and produce unreliable outcome. If the sample size too big like up to 400 respondents, we are not able to collect the questionnaire due to the time constraints. Therefore, for undergraduate programme, 100 to 250 respondents are recommended for qualitative research. The responses received were exactly 250 questionnaires which mean that there is 100% effective sample size in this study. We have set the quota for each of the samples. The proportion for the sampling size would be 100 respondents including lecturers, tutors and staffs in UTAR, 50 parents/ patients from three private hospitals in Penang and 100 individuals who are qualified as survey respondents in Gurney Plaza, Penang. These respondents would have better interest and ability to adopt the stem cell treatment because of future own well or for their kids' future own good.

## **3.5 Research Instrument**

### **3.5.1 Study Location**

In this study, we've choose three location as our study locations which included three private hospitals located in Penang, UTAR Perak campus and Gurney Plaza Penang.



First of all, the reasons Penang was being selected as the areas to conduct survey is because majority of Penang citizens or residents are considered as rich or earning high or middle income compare to other states of citizens. Moreover, Penang is the second fast moving state in Malaysia. Most of the Multinational Companies (MNCs) came in Penang set up their operations or businesses. Therefore Penang industries and markets are growing day by day and becoming more advance state in Malaysia. Because of the fast growing industries and market, Penang's standards of living are growing high and citizens are earning high income, so their spending power also high.

Furthermore, according to Penang State Tourism Official Website (2010), it cited Tourism Malaysia 2009 Tourist Arrival Statistics and stated that Penang is ranked third place for tourism destination in Malaysia. Penang has received 5.9 million in tourism arrival (as shown in Table 3.5.1.1) compare with five other states. Moreover, it has increasing the amount of tourist arrival in year 2010 that accounted 9 million compare with previous year 2009 which is only accounted 5.9 million. This shows that increased 4 million of tourists arrived is such a huge amount of growing and it is just a year later only.

According to the Penang State Tourism Official Website (2009), it stated that "Penang Island was honored as one of the Top Asian Islands in Travel and Leisure's 2008 World's Best Awards as well as chosen as No.2 by readers recommendation in the New York Times "Best Places to Go in 2009"." In addition, the number of hotel guests in 2008 by Malaysia tourists' statistics was 68.8 million compared to 61.6 million in 2007. This shows that an increase of 11.7% in Malaysia tourist arrival, Penang has achieved higher in percentage of tourist arrivals compared to the whole of Malaysia. (Penang State Tourism Official Website, 2009)

Table 3.5.1.1: Statistics of Tourism Arrival in Various States in Malaysia within Year 2007-2010 (JAN-MAR)

TOURIST ARRIVALS					
NO.	BYLOCALITY	2007	2008	2009	2010 (JAN-MAR)
1.	KUALALUMPUR	16,595,746	16,385,160	15,737,306	1,789,289
2.	PAHANG	7,365,938	10,110,508	9,652,909	1,716,073
3.	PENANG	5,186,611	6,307,468	5,960,329	943,491
4.	SABAH	6,168,989	6,634,429	5,362,270	630,680
5.	KEDAH	4,528,445	3,817,017	3,846,529	623,743
6.	MELAKA	3,277,406	4,351,397	3,759,515	558,668

Source: Penang State Tourism Official Website (2011)

The first location we attended was the three private hospitals in Penang which included Gleneagles Medical Centre Penang, Bukit Mertajam Specialist Hospital and Hospital Pantai Mutiara. These three high class private hospitals are rated as high class private hospital because they are specializes in a wide range of medical areas and equip advanced facilities, provide latest facilities for the best delivery of quality healthcare services to both local and international patients. They are also offering stem cell treatment to the public with latest and advance facilities.

Other than that, they are the most popular private hospital among other private hospitals in Penang because of they are good in reputation, achieved many medical awards, certifications as well as hospital accreditations and many professional doctors in the hospital designated in various specialty areas. Because of the good reputation of the hospital, most of the Penang citizens will go these three private hospital for medical check-up, operation, surgery and etc. Besides that, the patients of these three private hospitals are fit nicely

into the characteristics of target population in this study such as the level of income must be middle or high in order for those patients or patients' family to pay for the expensive hospital's fees. Therefore, these three private hospitals were chosen as the sampling location for this study.

Second location that we choose is Gurney Plaza Penang. Gurney Plaza is a well-known shopping mall in Penang and Gurney Plaza has positioned itself as Penang's Premier Lifestyle Shopping Mall. Because of this, most of the Penang citizens or residents will shopping or spend their leisure time over there. Besides that, Gurney Plaza is also the only home in Penang State for some exclusive and luxury international brands such as Coach, Birkenstock, Dorothy Perkins, Fossil and CK Jeans. Therefore, most of the office workers will go there to spend their time to shopping and buy exclusive and luxury international brands. Moreover, Gurney Plaza is strategically located in the famous Gurney Drive promenade in Penang, it is also located along the seaside view that always crowded of people and tourists gather at there to look at the beautiful seaside and take some pictures. So, there will always a lot of people as well as tourists from difference states, countries gather there especially during weekend. Therefore, conducting survey in Gurney Plaza during weekend enable us to obtain more information from qualifies respondents based on their level of income and level of education.

Third location that we choose is UTAR Perak campus. UTAR Perak campus was chosen as our study location is because UTAR Perak campus is already considered as main campus since 2007. Most of the potential academicians were transferred from difference campus such as Petalling Jaya campus, Setapak campus, Sungai Long campus as well as Kuala Lumpur campus to Perak main campus. Furthermore, by May 2007, there was the first batch of students are received by UTAR. Until 2011, UTAR Perak campus has

received more than ten thousands of students all over the country. Therefore, UTAR is now moving toward fast developing private university in Malaysia that full of students all over the country as well as professional academicians. It is becoming more potential and famous private university in Malaysia.

### **3.5.2 Data Collection Time Period**

Data collection time period for this study was started from May 2011. Once we have completed the questionnaire and approved by supervisor, we decided to go for the first locations which are the three high class private hospitals in Penang.

In 23 of May 2011, we have permitted by our supervisor as well as UTAR to allow us to conduct survey in three private hospitals in Penang. At the same day, we directly e-mailing to each of the private hospital's Human Resource Department to request permission to allow us to conduct survey inside the hospitals.

After few days of processing of our request, which is 26 of May 2011, permission is approved. In 27 of May 2011 which is Friday, we attended to the private hospitals in Penang, and that day is working days. So, it enable us to meet with the HR officer of the private hospital and they able to assist us all the time during the survey conducting and guide us all the way in the hospital.

First private hospital we attended was Bukit Mertajam Specialist Hospital. Survey started at 9 a.m. and end at 11.30 a.m. After that, second private

hospital is Hospital Pantai Mutiara. Due to the Friday praying time for the Malay which is known as “SembahYang” from 1 p.m. to 2 p.m., all the management officers will go to pray. Therefore, survey was started at 2.15 p.m. and its end at 2.50 p.m. After that, we went to the last private hospital which is Gleneagles Medical Centre Penang. Survey started at 3.50 p.m. and its end at 5 p.m.

In 29 of May 2011 which were held on Sunday. It is the suitable day and time for us to conduct survey in Gurney Plaza because during weekend, there will be crowded with people. Therefore, we able to conduct survey and the chances to obtain or collect information from qualified respondents are very high. Survey was started on 11 a.m. to 9 p.m. We started the survey at 11 a.m. is because most of the people will go to shopping after their breakfast or just to have their breakfast over there. So, it is the suitable time for us to approach more qualified respondents. Furthermore, survey conducted until 9 p.m. is because during night, most of the adults or family will go to shopping mall to spend their leisure time after their dinner.

In 1 of June 2011, we continue the survey in UTAR Perak campus. Survey started at 10.30 a.m. and its end at 5 p.m. Distribution of questionnaire to each of qualified lecturers, tutors, as well as staffs in faculty office such as FBF, FICT, FEGT, FS, FAS and CFS. In between the survey time, some lecturers, tutors and staffs are available or free at certain time depending to their consultation hours but some are not, therefore we have to wait for them and distribute the questionnaire when they are available to meet us. Survey was conducted until 5 p.m. because most of the lecturers tutors and staffs off from work at 5 p.m. or 6 p.m.

### 3.5.3 Questionnaire

Questionnaire consists of 2 sections which included Section A and Section B. (refer to appendix 1) Section A includes questions regarding the IVs and DV as well as attributes/ measurement for both IVs and DV. Questions asked on IVs are based on attributes of each IV such as “you will try to avoid the likelihood of experiencing health deterioration among your family members, including yourself.” “You are concerned about the seriousness of contracting an illness and the consequence of bad health.” Furthermore, it also consists of the questions regarding the level of awareness of the stem cell treatment among Malaysia market which is the DV. Respondent was asked to indicate and complete the questions with the 7-point Likert scale ranging from “Very Agree” (7) to “Very Disagree” (1). Overall in Section A, there are 12 questions from four IVs and one DV.

Whereas for Section B, it consists of demographic information of participants which includes gender, age, race, level of education, occupation and monthly family/household income.

Perceived threat (PT), perceived efficacy (PE), perceived fatalism (PF) and perceived benefit (PB) are the independent variables (IV) in this study. Each of the independent variables consists of 2 attributes/measurements being evaluated in this study. All of these independent variables and dependent variable are adapted from Victoria, Celette, Usha, Susan, R.Brain, Patrick and Joanne (2004), Thomas and Cheryl (2005), Witte (1992).

There were 2 questions on each of the IV which is based on the attributes of the IV. All these questions were evaluated using 7-point Likert scale which ranging from “Very Agree” (7) to “Very Disagree” (1).

Awareness is the dependent variable (DV) in this study. There are 4 questions based on the attributes being evaluated and also using 7- point Likert scale which ranging from “Very Agree” (7) to “Very Disagree” (1).

## **3.6 Data Processing**

### **3.6.1 Questionnaire Checking**

The questionnaire had gone through few times of moderation and adjustment before it was completed. The questionnaire has to be moderated and approved by our supervisor to ensure the quality and the appropriateness of the questions asked before it can be distributed. Identifying the problems and making correction are the main purpose of checking. When collecting back the questionnaire from the respondents may be unacceptable for several reasons such as parts of the questionnaire may be incomplete. The pattern of responses may indicate that the respondents did not understand or follow the instructions. The responses show little variance. But in this study, responses received were exactly 250 set questionnaires, which mean that there are no missing questionnaires.

### **3.6.2 Data Editing**

Data editing was carried out to increase the accuracy and precision of the results collected from the questionnaire and overall of the research. The questionnaires with unsatisfactory responses may be returned back to the respondent on the spot, where the respondent needs to redo or correct the parts that make mistake. Poor and contrasting response from the questionnaires would be kept for review and checking for consistency.

### **3.6.3 Data Coding**

Data coding is used to assign code to each of the answer options provided in the questions so that analysis can be done using SPSS software. For example perceived threat is assigned as (PT), perceived benefits is assigned as (PB) and so on and so forth.

The questions in section A are regarding the awareness of stem cells treatment of respondents. For instances, the 1st question asked: “You aware of stem cells treatment.” Therefore, respondent that very disagree with this statement is coded as (1) and if they very agree with the statement is coded as (7).

### **3.6.4 Data Cleaning**

Data cleaning is the process of checking for consistency and handling of missing responses. SPSS software is used for checking and identifying out-of-



range data, logically inconsistent or extreme value. Ambiguous answers to questions will be assigned as missing responses occurred. Missing responses will either be substituted a neutral value or discarded.

## **3.7 Data Analysis**

In this study, Software Package for Social Science (SPSS) Version 17 (2010) was used as the data analysis tools to analyze the data collected from respondents. SPSS is very useful in analyze complicated tasks.

### **3.7.1 Descriptive Analysis**

Descriptive analysis is a type of data analysis to transform raw data into a form that helps researchers to understand and interpret in term of arranging, and manipulating to provide descriptive information. The summarization of data is commonly done by calculating average, frequency distribution, and percentage distribution. We use cross-tabulation to describe two or more variables simultaneously. The reason to use cross-tabulation is to compare or compute two or more variable at the same time. In this research, we compare the income level of respondent, high level income and middle level income. People with high level income are having more high spending power if compare with those middle level income.

### **3.7.2 Scale Measurement**

Reliability analysis is an analysis to make sure that measure is free from error and therefore yields consistent result. The stronger the correlation, the higher the reliability of the scale will be whereas the weaker the correlation, the lower the reliability of the scale.

Nunnally (1978) stated that Cronbach's alpha coefficient provides general and effective form or reliability estimation. Correlation coefficient value is ranged from 0 to 1; where, the higher the coefficient, the more reliable are the items at measuring constructs. A value of 0.6 (or less) generally indicates unsatisfactory internal consistency reliability.

### **3.7.3 Inferential Analysis**

#### **3.7.3.1 Multiple Linear Regressions**

According to Hair, Streers and Porter (2006), multiple regression analysis is a statistical technique which analyzes the linear relationship between a dependent variable and multiple independent variables by estimating coefficient for the equation for a straight line.

Multiple regressions analysis is an equation used to explain the results of multiple regression analysis. The general equation of the multiple regressions is as follows:

$$Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_px_p$$

Where, Y = dependent variable

$\beta_0$  = estimated constant

$\beta_{1-n}$  = coefficient associated with the predictor variables

$X_{1-n}$  = predictor (independent) variables that influences the dependent variable.

### 3.8 Anticipated Limitations

Throughout the chapter 3, we have faced few anticipated limitations in this chapter. First, follow-ups are not possible because participants' personal information such as name, contact number or address is not required to write down in the questionnaire. So sometimes if questionnaire are not complete or respondents didn't answer clearly, we are not able to contact them to fill in the answer or make some changes. Therefore, those questions are considered missing or void.

Second, language constraint is also the major limitation in this study. Some respondents do not understand the languages written on the questionnaire or/and the language that our members communicate with them. Furthermore, respondents might also don't understand what the questions asking about and also what stem cell treatment is all about. In order to reduce this limitation, we have to explain details to respondent what they don't understand and provide 3 major languages in the questionnaire which are English, Bahasa Malaysia as well Chinese.

We also faced several limitations regarding study locations and data collection time. First, many procedures needed to go through or checking before enters to the wards or hospital. This is due to the safety and privacy policies of the private hospital. Second, majority respondents in Gurney Plaza are Chinese because this is due to majority citizen in Penang are Chinese. To reduce this limitation, we try to reduce or avoid approach too much Chinese and approach more other races.

Third, time constraint in term of travelling from one private hospital to another hospital in one day is also one of the anticipated limitations. This is due to the long distance of each hospital. To reduce this limitation, separation of the survey time need to extend from one day to two days or even more.

Lastly, survey in UTAR can only conduct during weekdays because of working days. There will be no people in the campus during weekend. So we need to extend the data collection time.

### **3.9 Conclusion**

As a conclusion for this chapter, the research design, data collection method, target population and sample, construct measurement, and data analysis were discussed in detail. In this chapter, 250 set questionnaires were distributed to target respondents from difference study locations. Response rate of questionnaire returned was exactly 250 sets. Quota sampling and judgmental sampling were used as the sampling technique. SPSS software used to analyze the collected data and analysis tested in chapter four in order to obtain the result for this research project. The following chapter will present the result of statistical analysis as well as discussion and interpretation on the result of the hypotheses.

## **CHAPTER 4: DATA ANALYSIS**

### **4.0 Introduction**

This chapter presents the patterns of the results and analyses of the results which are relevant to the research questions and hypotheses. Besides that, this chapter further discuss about the findings of the research which consists of three main analyses specifically which are descriptive analysis, scale measurement and inferential analysis. Descriptive analysis covers the demographics of the respondents and the central tendencies measurement of constructs. As for scale measurement, it provides the reliability tests of the constructs used. Last but not least, inferential analysis is the last and crucial part in the research project that provides the result of the hypotheses.

### **4.1 Descriptive Analysis**

#### **4.1.1 Respondent Demographic Profile**

A Total of twelve questions containing with respect of gender, age, race, level of education, occupation, and monthly family or household income provided were put forwarded to perspective respondent.

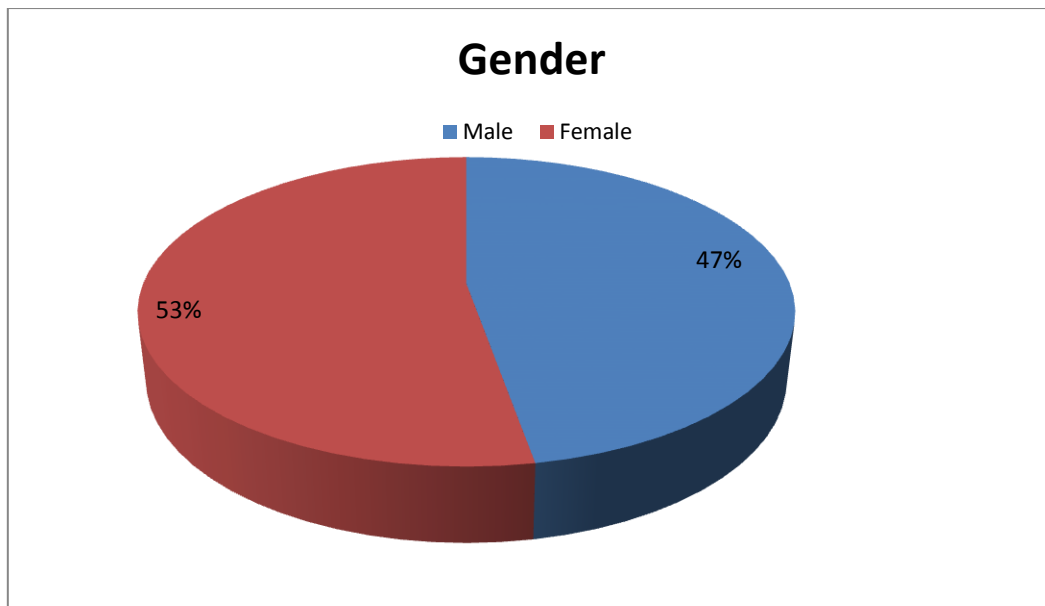
4.1.1.1 Gender

Table 4.1: Frequency Table for Gender

		Gender			Cumulative Percent
		Frequency	Percent	Valid Percent	
Valid	Male	118	47.2	47.2	47.2
	Female	132	52.8	52.8	100.0
Total		250	100.0	100.0	

Source: Developed for research

Figure 4.1: Percentage of Respondent Based on Gender



Source: Developed for research

Based on Table 4.1, it shows that female respondent is more than male respondent by a slight percentage with 52.8 percent and 47.2 percent. This shows that female and male respondents are almost equal among the respondents of our questionnaire.

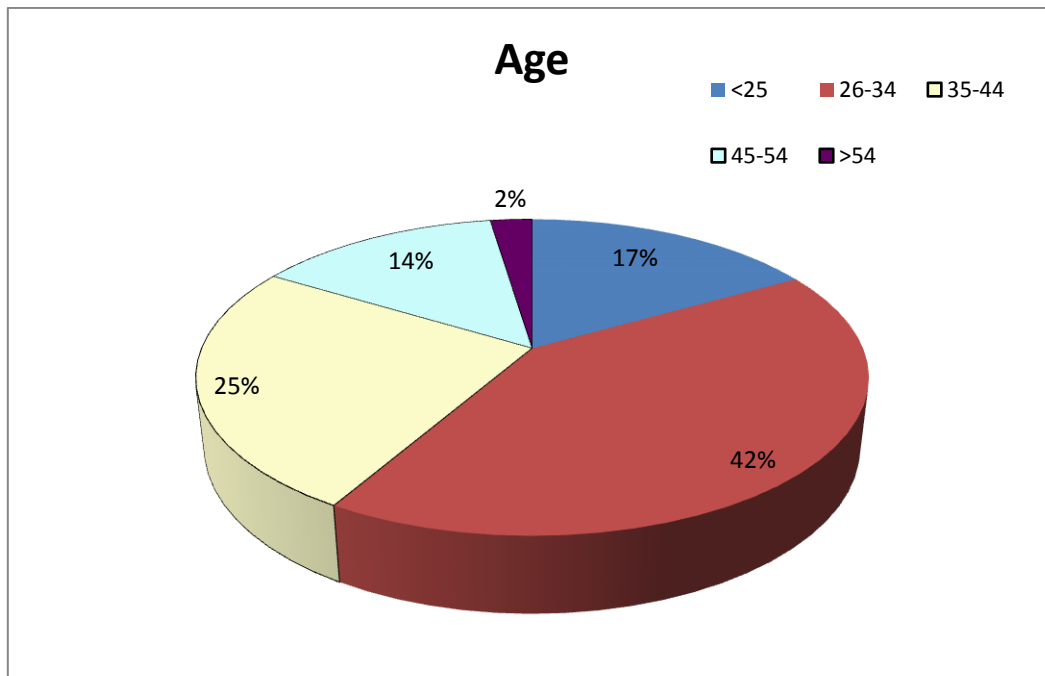
4.1.1.2 Age

Table 4.2 Frequency Table for Age

		Age (years)			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<25	42	16.8	16.8	16.8
	26-34	104	41.6	41.6	58.4
	35-44	63	25.2	25.2	83.6
	45-54	35	14.0	14.0	97.6
	>54	6	2.4	2.4	100.0
	Total	250	100.0	100.0	

Source: Developed for research

Figure 4.2: Percentage of Respondent Based on Age



Source: Developed for research

Table 4.2 shows that, the age of the respondents constituted majority by those who are 26 year old to 34 year old (41.6%) and the age group of 35 year old to 44 year old (25.2%). Whereas the rest consists of 42 respondents that aged between below 25 year old (16.8%), 35 respondents that are 45 year old to 54 year old (14.0%), and 6 respondents which are 54 year old and above (2.4%).

**4.1.1.3 Race**

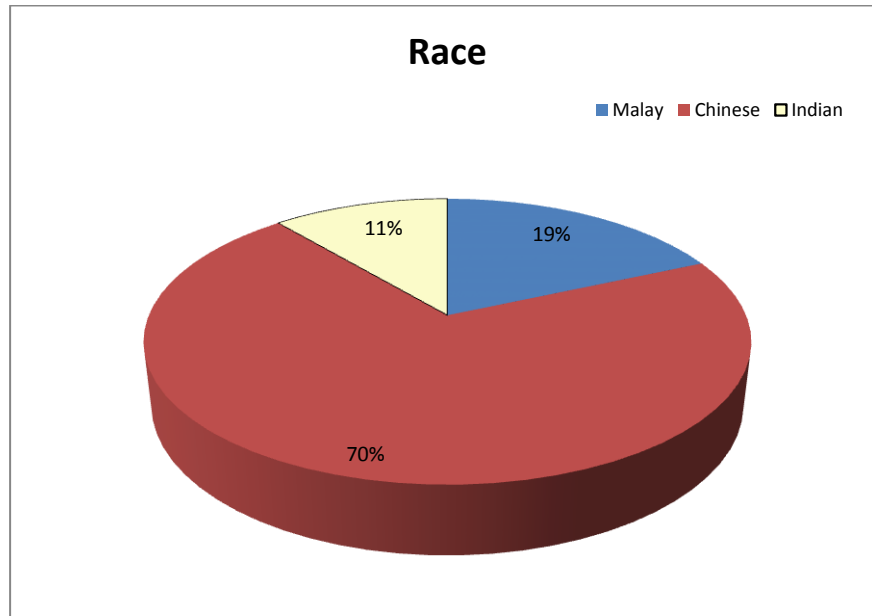
Table 4.3: Frequency Table for Race

		Race			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	46	18.4	18.4	18.4
	Chinese	176	70.4	70.4	88.8
	Indian	28	11.2	11.2	100.0
	Total	250	100.0	100.0	

Source: Developed for research



Figure 4.3: Percentage of Respondent Based on Race



Source: Developed for research

Table 4.3 shows that majority of the respondents are Chinese which comprise 70.4 percent with amount of 176 people. Followed by Malay which consist only 18.4 percent. Lastly, Indian which consist only 11.2 percent.

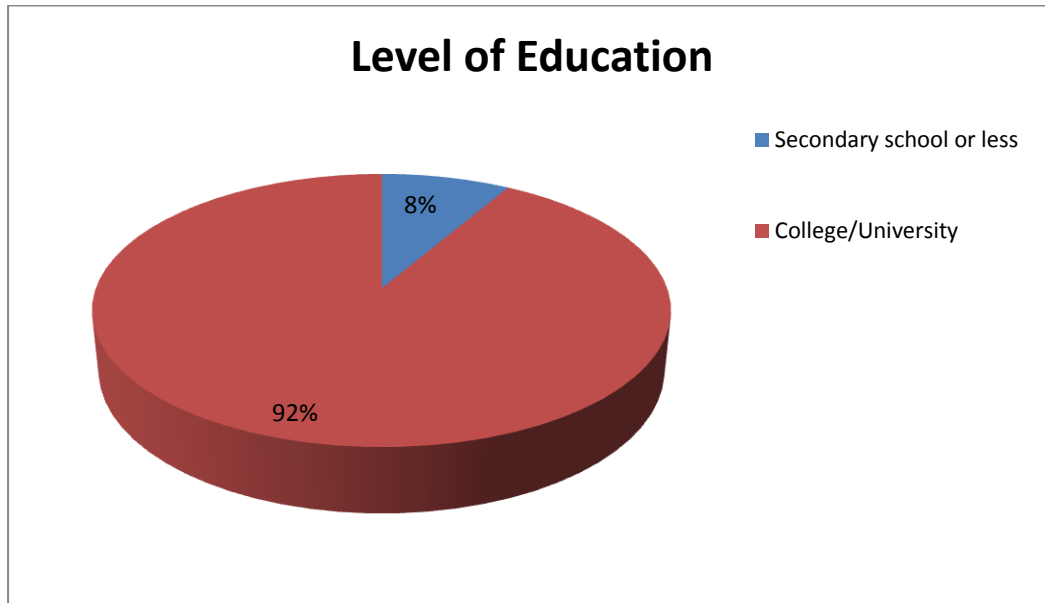
**4.1.1.4 Level of Education**

Table 4.4: Frequency Table for Level of Education

		Level of Education			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary school or less	21	8.4	8.4	8.4
	College/University	229	91.6	91.6	100.0
	Total	250	100.0	100.0	

Source: Developed for research

Figure 4.4: Percentage of Respondent Based on Level of Education



Source: Developed for research

Through table 4.4, it shows that respondent level of education for College or University has the highest percentage which is 91.6 percent. However, the respondent level of education for Secondary school or less just consists of 8.4 percent.

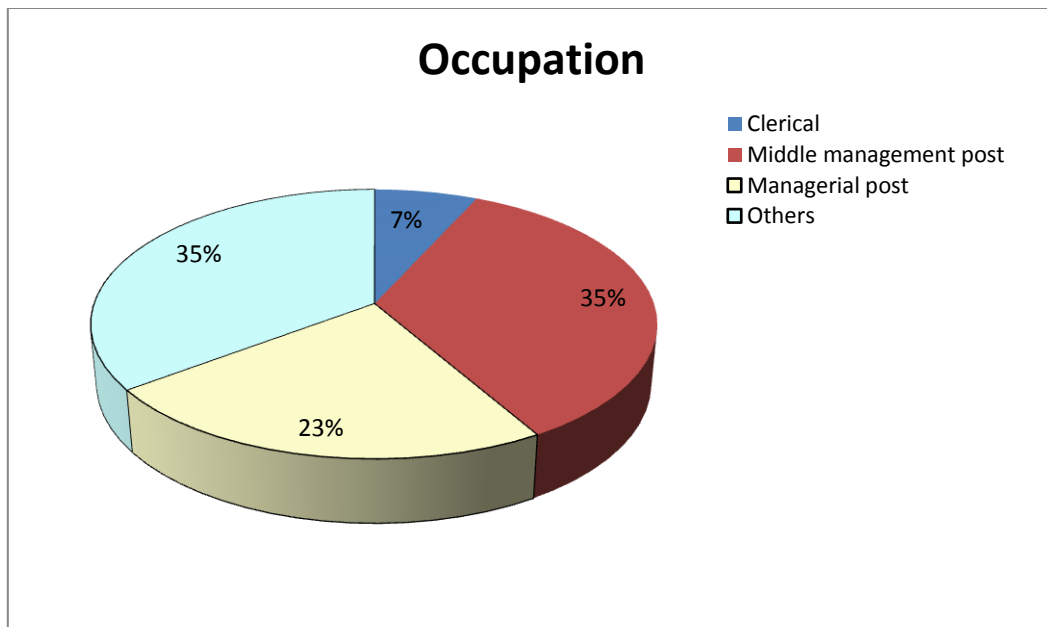
**4.1.1.5 Occupation**

Table 4.5: Frequency Table for Occupation

		Occupation			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Clerical	17	6.8	6.8	6.8
	Middle management post	87	34.8	34.8	41.6
	Managerial post	58	23.2	23.2	64.8
	Others	88	35.2	35.2	100.0
	Total	250	100.0	100.0	

Source: Developed for research

Figure 4.5: Percentage of Respondent Based on Level of Education



Source: Developed for research

Based on the table 4.5, it shows that occupation of respondent for both Middle management post and others occupation have the highest and

nearest percentage which is 34.8 percent and 35.2 percent. There are 58 respondents work as Managerial post which comprises 23.2 percent whereas 17 respondents work as Clerical which consist of 6.8 percent.

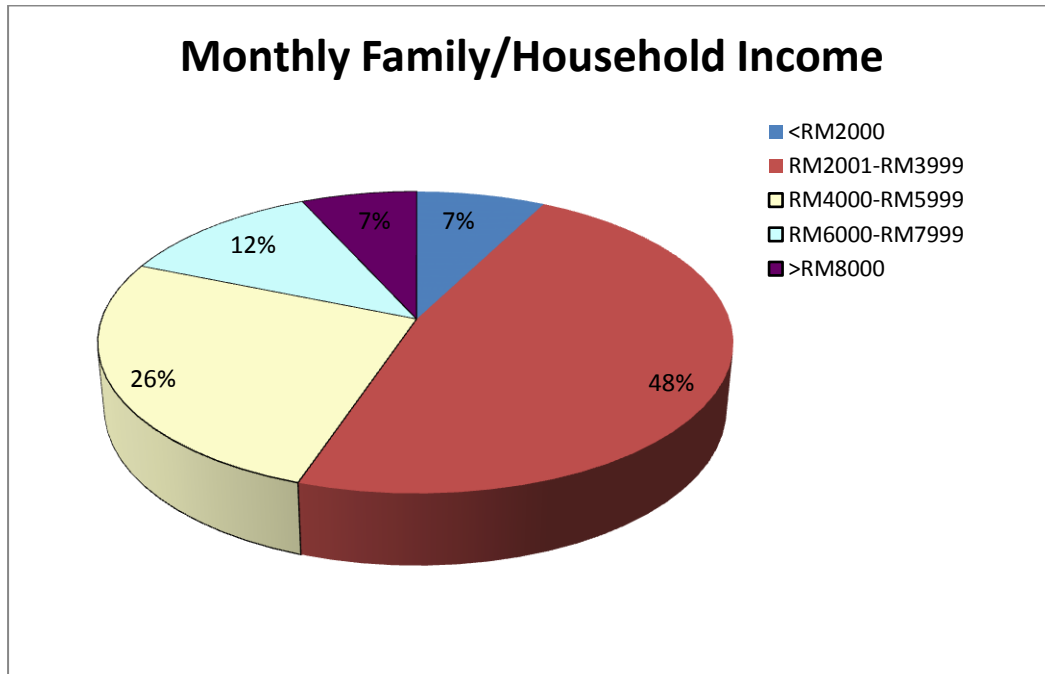
**4.1.1.6 Monthly Family or Household Income**

Table 4.6: Frequency Table for Monthly Family or Household Income

		Monthly Family/Household Income			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<RM2000	19	7.6	7.6	7.6
	RM2001 - RM3999	119	47.6	47.6	55.2
	RM4000 - RM5999	65	26.0	26.0	81.2
	RM6000 - RM7999	30	12.0	12.0	93.2
	>RM8000	17	6.8	6.8	100.0
	Total	250	100.0	100.0	

Source: Developed for research

Figure 4.6: Percentage of Respondent Based on Monthly Family or Household Income



Source: Developed for research

According to table 4.6, most of the respondent monthly income is from the range of RM2001 – RM3999 while having the highest percentage which is 47.6 percent. The second highest percentage is from the range of RM4000 – RM5999 which has 65 respondents with 26.0 percent. On the other, the monthly income from the range of RM6000 – RM7999 having the percentage of 12.0. Followed by monthly income of below RM2000 and more than RM8000 where by both are quite closed with 7.6 percent and 6.8 percent.

#### 4.1.2 Crosstabs for Demographic Profile with Awareness

Crosstabs analysis is use to test the relationship of two nominal or ordinal data that can help us to find which segmentation are interest in stem cell therapy.

Table 4.7: Crosstabs Table of Demographic Profile with Consciousness

Demographic		Highest Percentages	Likert Scale
Gender	Female	19.6%	Neutral
Age	26 - 34	14.4%	Neutral
Race	Chinese	24.0%	Neutral
Level of Education	College or University	27.6%	Neutral
Occupation	Middle Management post	12.4%	Neutral
Monthly Family/Household Income	RM2001 – RM3999	18.0%	Neutral

Source: Developed for research

Based on the table 4.7, it shows the result which groups of respondent (gender, age, race, level of education, occupation and monthly family or household income) are aware of stem cell treatment. Female respondents have the highest percentages which are 19.6%, follow by age group between 26 year old to 34 year old score 14.4%. Chinese have the highest percentages compare with other race which is 24.0%. For the level of education category, respondent that complete college or university have the highest percentages which is 27.6%. According to the table 4.7, middle management post has the highest percentages in occupation category which score 12.4%. Last but not least, most of the respondent monthly income is from the range of RM2001 – RM3999 while having the highest percentage which is 18.0%. All the demographics profile who score the highest percentages also neutral about the statement of “You are awake of stem cell treatment”.

Table 4.8: Crosstabs Table of Demographic Profile with Knowledge

Demographic		Highest Percentages	Likert Scale
Gender	Female	16.4%	Disagree
Age	26 - 34	14.0%	Disagree
Race	Chinese	19.6%	Disagree
Level of Education	College or University	24.8%	Disagree
Occupation	Other Occupation	14.4%	Disagree
Monthly Family/Household Income	RM2001 – RM3999	13.2%	Disagree

Source: Developed for research

Based on the table 4.8, it shows the result which groups of respondent (gender, age, race, level of education, occupation and monthly family or household income) are have some knowledge or idea about treatments that can be performed by stem cell. Female respondents have the highest percentages which are 16.4%, follow by age group between 26 year old to 34 year old score 14.0%. Chinese have the highest percentages compare with other race which is 19.6%. For the level of education category, respondent that complete college or university have the highest percentages which is 24.8%. According to the table 4.7, other occupation has the highest percentages in occupation category which score 14.4%. Last but not least, most of the respondent monthly income is from the range of RM2001 – RM3999 while having the highest percentage which is 13.2%. All the demographics profile who score the highest percentages also disagree about the statement of “You have some knowledge or idea about treatments that can be performed by stem cell”.

Table 4.9: Crosstabs Table of Demographic Profile with Realization

Demographic		Highest Percentages	Likert Scale
Gender	Female	21.2%	Agree
Age	26 - 34	16.4%	Agree
Race	Chinese	21.6%	Neutral
Level of Education	College or University	31.6%	Agree
Occupation	Other Occupation	14.8%	Neutral
Monthly Family/Household Income	RM2001 – RM3999	20.4%	Agree

Source: Developed for research

Based on the table 4.9, it shows the result which groups of respondent (gender, age, race, level of education, occupation and monthly family or household income) will support or accept credible news about the treatments that can be performed by stem cell. Female respondents have the highest percentages which are 21.2%, follow by age group between 26 year old to 34 year old score 16.4%. Chinese have the highest percentages compare with other race which is 21.6%. For the level of education category, respondent that complete college or university have the highest percentages which is 31.6%. According to the table 4.7, other occupation has the highest percentages in occupation category which score 14.8%. Last but not least, most of the respondent monthly income is from the range of RM2001 – RM3999 while having the highest percentage which is 20.4%. Level of education and occupation demographics profile that score the highest percentages also neutral about the statement of “You will support or accept credible news about the treatments that can be performed by stem cell”. However other demographics profile who score the highest percentages are agree with the statement.



Table 4.10: Crosstabs Table of Demographic Profile with Cognizance

Demographic		Highest Percentages	Likert Scale
Gender	Female	23.2%	Agree
Age	26 - 34	19.6%	Agree
Race	Chinese	30.4%	Agree
Level of Education	College or University	33.6%	Agree
Occupation	Other Occupation	20.4%	Agree
Monthly Family/Household Income	RM2001 – RM3999	23.6%	Agree

Source: Developed for research

Based on the table 4.10, it shows the result which groups of respondent (gender, age, race, level of education, occupation and monthly family or household income) are eager to continue enhancing your knowledge of stem cell treatment. Female respondents have the highest percentages which are 23.2%, follow by age group between 26 year old to 34 year old score 19.6%. Chinese have the highest percentages compare with other race which is 30.4%. For the level of education category, respondent that complete college or university have the highest percentages which is 33.6%. According to the table 4.7, other occupation has the highest percentages in occupation category which score 20.4%. Last but not least, most of the respondent monthly income is from the range of RM2001 – RM3999 while having the highest percentage which is 23.6%. All the demographics profiles that score the highest percentages also agree about the statement of “You are eager to continue enhancing your knowledge of stem cell treatment”.

**4.1.3 Central Tendencies Measurement of Constructs**

**4.1.3.1 Central Tendencies: Perceived Threat**

Table 4.11 Central Tendencies: Perceived Threat

Items	VD (1)	MD (2)	D (3)	N (4)	A (5)	MA (6)	VA (7)	Mean
You will try to avoid the likelihood of experiencing health deterioration among your family members, including yourself.	2.8	5.2	9.2	21.2	28.8	19.2	13.6	4.80
You are concerning to the seriousness of contracting an illness and the consequent of bad health.	2.4	1.2	4.4	11.2	35.6	36.4	8.8	5.21

Source: Developed for the research

Note:

VD = Very Disagree

MD = Moderate Disagree

D = Disagree

N = Neutral

A = Agree

MA = Moderate Agree

VA = Very Agree

Table 4.11 shows the mean and percentage for every item of perceived threat. 36.4 percent of the respondent moderate agrees the statement of concerning to the seriousness of contracting an illness and the consequent of bad health. This statement scores 5.21 mean. 35.6 percent of the respondent agreed and 11.2 percent of the respondent neutral with the statement. 8.8 percent of the respondent very agrees with the statement. Followed by 4.4 percent and 2.4 percent of the respondent are disagree and very disagree with the statement.

Respondent that moderate disagree with the statement only consists of 1.2 percent.

Next is the statement “You will try to avoid the likelihood of experiencing health deterioration among your family members, including yourself.” 28.8 percent of the respondent agreed to the statement. Followed by 21.2 percent of respondent neutral and 19.2 percent of respondent are classified as moderate agree with the statement. Therefore, it has the lowest in mean which is 4.80. There are 13.6 percent of respondent are very agree with the statement. Besides that, Respondent that disagrees with the statement only consists of 9.2 percent. Table 4.11 shows that both moderate disagree and very disagree have 5.2 and 2.8 percent.

**4.1.3.2 Central Tendencies: Perceived Efficacy**

Table 4.12 Central Tendencies: Perceived Efficacy

Items	VD (1)	MD (2)	D (3)	N (4)	A (5)	MA (6)	VA (7)	Mean
You believe that an action to response can decrease the fear of infecting illnesses or diseases in future.	3.6	7.6	10.4	23.6	33.2	16.4	5.2	4.45
You believe that medical science can cure or prevent an illness or disease from deteriorating.	2.8	9.2	12.8	23.2	29.2	20.0	2.8	4.38

Source: Developed for the research

From the table 4.12 which show the respondents perceived efficacy, the statement “You believe that an action to response can decrease the fear of infecting illnesses or diseases in future.” has the highest mean of 4.45. 33.2 percent of the respondent agreed and 23.6 percent of the respondent neutral with the statement. There are 16.4 percent of respondent are moderate agree with the statement. 10.4 percent of the respondent disagree with the statement.

Followed by 7.6 percent and 5.2 percent of the respondent are moderate disagree and very agree with the statement. Respondent that very disagree with the statement only consists of 3.6 percent.

Based on the table 4.12, the statement “You believe that medical science can cure or prevent an illness or disease from deteriorating.” has the lowest mean of 4.38. 29.2 percent of the respondent agrees and 23.2 percent of the respondent neutral with the statement. There are 20.0 percent of respondent are moderate agree with the statement. 12.8 percent of the respondent disagrees with the statement. Followed by 9.2 percent of the respondent are moderate disagree with the statement. Table 4.12 shows that both very disagree and very agree have the same 2.8 percent.

**4.1.3.3 Central Tendencies: Perceived Fatalism**

Table 4.13 Central Tendencies: Perceived Fatalism

Items	VD (1)	MD (2)	D (3)	N (4)	A (5)	MA (6)	VA (7)	Mean
You believe the fact that anyone of your family members, including yourself maybe affected by any current or any new illnesses or diseases.	2.8	8.0	8.0	20.0	30.0	19.6	11.6	4.72
You believe that any illness or diseases suffered by anyone of your family members, including yourself maybe cured.	2.4	2.8	1.6	15.6	30.0	44.8	2.8	5.14

Source: Developed for the research

Table 4.13 indicates the percentage and mean of respondent perceived fatalism where the highest mean is the “You believe that any illness or diseases suffered by anyone of your family members, including yourself maybe cured.” which scored 5.14. 44.8 percent of the

respondent moderate agrees and 30.0 percent of the respondent agrees with the statement. There are 15.6 percent of respondent are neutral with the statement. 2.8 percent of the respondent very agrees with the statement. Followed by 2.8 percent and 2.4 percent of the respondent are moderate disagree and very disagree with the statement. Respondent that disagree with the statement only consists of 1.6 percent.

However, for the statement “You believe the fact that anyone of your family members, including yourself maybe affected by any current or any new illnesses or diseases.”, it is the lowest mean which only 4.72. There are 30.0 percent of the respondent agrees with the statement. Besides that, table 4.13 shows that neutral and moderate agree have the nearest percent which is 20.0 and 19.6 percent. 11.6 percent of the respondent very agrees with the statement. Followed by 8.0 percent of the respondent are moderate disagree and disagree with the statement. Respondent that very disagree with the statement only consists of 2.8 percent.

**4.1.3.4 Central Tendencies: Perceived Benefit**

Table 4.14 Central Tendencies: Perceived Benefit

Items	VD (1)	MD (2)	D (3)	N (4)	A (5)	MA (6)	VA (7)	Mean
You believe that revolution of medical science such as stem cell treatment can help you to reduce the fear of infecting illness or diseases.	3.2	2.4	6.8	16.8	31.2	28.0	11.6	5.00
You believe that development of medical science can cure current or new illness or diseases.	4.0	0.8	4.0	7.6	40.0	34.0	9.6	5.19

Source: Developed for the research

Table 4.14 shows the mean and percentage for every item of perceived benefit. 40.0 percent of the respondent agreed that development of medical science can cure current or new illness or diseases. Followed by 34.0 percent of respondent moderate agree and 9.6 percent of respondent are classified as very agree with the statement. Therefore, it has the highest in mean which is 5.19. There are 7.6 percent of respondent are neutral with the statement. Besides that, table 4.10 shows that both very disagree and disagree have the same 4.0 percent. Respondent that moderate disagree with the statement only consists of 0.8 percent.

Next are the statement of believe that revolution of medical science such as stem cell treatment can help to reduce the fear of infecting illness or diseases. This statement scores 5.00 mean. 31.2 percent of the respondent agrees and 28.0 percent of the respondent moderate agrees with the statement. 16.8 percent of the respondent neutral with the statement. There are 11.6 percent of respondent are very agree with the statement. Followed by 6.8 percent and 3.2 percent of the respondent are disagree and very disagree with the statement. Respondent that moderate disagree with the statement only consists of 2.4 percent.

**4.1.3.4 Central Tendencies: Awareness**

Table 4.15 Central Tendencies: Awareness

Items	VD (1)	MD (2)	D (3)	N (4)	A (5)	MA (6)	VA (7)	Mean
You are aware of stem cell treatment.	1.2	8.8	18.0	32.0	26.8	9.6	3.6	4.18
You have some knowledge or idea about treatment that can be performed by stem cell.	1.2	14.4	27.2	23.6	21.2	8.4	4.0	3.90
You will support or accept credible news about the treatments that can be performed by stem cell.	4.4	4.8	10.8	28.0	34.8	12.8	4.4	4.40
You are eager to continue enhancing your knowledge of stem cell treatment.	3.2	4.4	7.6	17.6	38.0	27.2	2.0	4.72

Source: Developed for the research

Table 4.15 illustrated the respondent awareness towards the stem cell treatment. It comprised of four items. The highest mean which score of 4.72 is “You are eager to continue enhancing your knowledge of stem cell treatment.” 38.0 percent of the respondent agrees and 27.2 percent of the respondent moderate agrees with the statement. There are 17.6 percent of respondent are neutral with the statement. 7.6 percent of the respondent disagrees with the statement. Followed by 4.4 percent and 3.2 percent of the respondent are moderate disagree and very disagree with the statement. Respondent that very agree with the statement only consists of 2.0 percent.

Followed in second highest mean is “You will support or accept credible news about the treatments that can be performed by stem cell.” This item score 4.40. 34.8 percent of the respondent agrees and 28.0 percent of the respondent neutral with the statement. There are 12.8 percent of respondent are moderate agree with the statement. 10.8 percent of the respondent disagrees with the statement. Followed by

4.8 percent of the respondent are moderate disagree with the statement. Beside that, table 4.15 shows that both very disagree and very agree have the same 4.4 percent.

The next item “You are awake of stem cell treatment.” Score the mean of 4.18. 32.0 percent of the respondent neutral and 26.8 percent of the respondent agrees with the statement. There are 18.0 percent of respondent are disagree with the statement. 9.6 percent of the respondent moderate agrees with the statement. Followed by 8.8 percent and 3.6 percent of the respondent are moderate disagree and very agree with the statement. Respondent that very disagree with the statement only consists of 1.2 percent.

And the last mean is “You have some knowledge or idea about treatment that can be performed by stem cell.” This item score 3.90 of mean. 27.2 percent of the respondent disagree and 23.6 percent of the respondent neutral with the statement. There are 21.2 percent of respondent are agree with the statement. 14.4 percent of the respondent moderate disagrees with the statement. Followed by 8.4 percent and 4.0 percent of the respondent are moderate agree and very agree with the statement. Respondent that very disagree with the statement only consists of 1.2 percent.

## 4.2 Scale Measurement

To construct the reliability, a measurement using the Reliability Test was conducted. Reliability test is when “a measure is reliable if independent but comparable measures of the same construct agree” (Dillon *et al.*, 1990). Researchers generally consider an alpha of 0.60 to 0.69 as moderate, 0.7 to 0.79 as good, and 0.8 to 0.89 as very good. Alpha value of 0.9 and above is considered as excellent.



Table 4.16: Reliability Statistics of Dependent and Independent Variables

IV No.	Independent Variables	Cronbach's Alpha	Numbers of Item
1	Perceived Threat	0.829	2
2	Perceived Efficacy	0.799	2
3	Perceived Fatalism	0.778	2
4	Perceived Benefit	0.716	2

Source: Developed for the research

Dependent Variable	Cronbach's Alpha	Numbers of Item
Awareness	0.871	4

Source: Developed for the research

Through table 4.16, it shows the result of the Cronbach's Alpha Reliability Test and the reliability ranges from 0.716 to 0.871. Perceived threat has the greatest reliability among other independent variables with the value of 0.829. Followed by perceived efficacy and perceived fatalism with value of 0.799 and 0.778. Perceived benefit has the lowest value which is 0.716. The reliability for awareness which is the dependent variable has 0.871. In conclusion, all constructs was more than 0.7 and above therefore the overall questions and scale used in the questionnaire are reliable.

## 4.3 Inferential Analysis

### 4.3.1 Pearson's Correlation

Table 4.17: Pearson's Correlation

		Correlations				
		PT	PE	PF	PB	DV
PT	Pearson Correlation	1	-.047	-.112	.015	-.138*
	Sig. (2-tailed)		.458	.077	.810	.029
	N	250	250	250	250	250
PE	Pearson Correlation	-.047	1	-.003	.087	-.126*
	Sig. (2-tailed)	.458		.963	.169	.047
	N	250	250	250	250	250
PF	Pearson Correlation	-.112	-.003	1	.095	.228**
	Sig. (2-tailed)	.077	.963		.134	.000
	N	250	250	250	250	250
PB	Pearson Correlation	.015	.087	.095	1	.270**
	Sig. (2-tailed)	.810	.169	.134		.000
	N	250	250	250	250	250
DV	Pearson Correlation	-.138*	-.126*	.228**	.270**	1
	Sig. (2-tailed)	.029	.047	.000	.000	
	N	250	250	250	250	250

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: Developed for the research

Pearson's correlation coefficient between variables is defined as the covariance of the variables divided by the product of their standard deviations (Higgins, 2005). Based on the table 4.17, it shows that it is a significant relationship among the variables when measurement of p value is less than 0.05. According table 4.17, the p value of perceived threat, perceived

efficacy, perceived fatalism and perceived benefit are 0.029, 0.047, 0.000, 0.000 where are less than alpha value 0.05 which shows that it has a significant relationship with the awareness. The perceived benefit variable has the 0.270 correlation with the awareness variables. So when the perceived benefit is high, awareness is high. The values of this correlation coefficient 0.270 show that the relationship between perceived threat and awareness is not strongly correlated. For the other variable which is perceived fatalism also has a positive value for correlation coefficient. Perceived fatalism had 0.228 correlations with the awareness variable. However, perceived threat and perceived efficacy has a negative value for correlation coefficient. Perceived threat and perceived efficacy had -0.138 and -0.126 correlation respectively, with the awareness variables.

### 4.3.2 Multiple Regression Analysis

Multiple Regression Analysis is used to examine the relationship between independent variables that include perceived threat, perceived efficacy, perceived fatalism and perceived benefit and dependent variables which is awareness. The table of multiple regression analysis is show below

Table 4.18.1 Variables Entered/Removed

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	PB, PT, PE, PF <sup>a</sup>		. Enter

a. All requested variables entered.

Source: Developed for the research

Table 4.18.2 Model Summary

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.390 <sup>a</sup>	.152	.138	3.66421

a. Predictors: (Constant), PB, PT, PE, PF

b. Dependent Variable: DV

Source: Developed for the research

Table 4.18.3 ANOVA

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	589.127	4	147.282	10.970	.000 <sup>a</sup>
	Residual	3289.469	245	13.426		
	Total	3878.596	249			

a. Predictors: (Constant), PB, PT, PE, PF

b. Dependent Variable: DV

Source: Developed for the research

Table 4.18.4 Coefficient<sup>s</sup>

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.190	2.128		6.197	.000
	PT	-.256	.118	-.128	-2.164	.031
	PE	-.234	.089	-.155	-2.614	.010
	PF	.350	.111	.187	3.150	.002
	PB	.509	.113	.267	4.503	.000

a. Dependent Variable: DV

Source: Developed for the research

## 1. Test of Significant

According the ANOVA table 4.18.3, the overall equation is significant (Sig = 0.000). Besides that, the table also shows that the F value is significant at 10.970. The overall regression model of predictors of perceived threat, perceived efficacy, perceived fatalism and perceived benefit is capable of explaining the variation in awareness.

## 2. Nature of Relationship

The nature of relationship between the independent variable (perceived threat, perceived efficacy, perceived fatalism and perceived benefit) and the dependent variable (awareness) is explained as each of the independent variable are significant at the below value of 0.05. Further explanation is show below.

### First Hypothesis H1 (Perceived Threat)

**H<sub>0</sub>:** Perceived threat of fear appeal cannot significantly raise public awareness.

**H<sub>1</sub>:** Perceived threat of fear appeal can significantly raise public awareness.

From the coefficient table 4.18.4, the significant value for PT (Perceived Threat) is 0.031. This value is  $P < 0.05$ . Therefore, H<sub>1</sub> is supported because the value is less than 0.05 which indicates there is a significant relationship between PT and DV. Thus, H<sub>0</sub> is rejected.

### Second Hypothesis H2 (Perceived Efficacy)

**H<sub>0</sub>:** Perceived efficacy of fear appeal cannot significantly raise public awareness.

**H<sub>1</sub>:** Perceived efficacy of fear appeal can significantly raise public awareness.

From the coefficient table 4.18.4, the significant value for PE (Perceived Efficacy) is 0.010. This value is  $P < 0.05$ . Therefore, H<sub>1</sub> is supported because the value is less than 0.05 which indicates there is a significant relationship between PE and DV. Thus, H<sub>0</sub> is rejected.

**Third Hypothesis H3 (Perceived Fatalism)**

**H<sub>0</sub>:** Perceived fatalism of fear appeal cannot significantly raise public awareness.

**H<sub>1</sub>:** Perceived fatalism of fear appeal can significantly raise public awareness.

From the coefficient table 4.18.4, the significant value for PF (Perceived Fatalism) is 0.002. This value is  $P < 0.05$ . Therefore, H<sub>1</sub> is supported because the value is less than 0.05 which indicates there is a significant relationship between PF and DV. Thus, H<sub>0</sub> is rejected.

**Fourth Hypothesis H4 (Perceived Benefit)**

**H<sub>0</sub>:** Perceived benefit of fear appeal cannot significantly influence public awareness towards the usage of stem cell.

**H<sub>1</sub>:** Perceived benefit of fear appeal can significantly influence public awareness towards the usage of stem cell.

From the coefficient table 4.18.4, the significant value for PB (Perceived Benefit) is 0.000. This value is  $P < 0.05$ . Therefore, H<sub>1</sub> is supported because the value is less than 0.05 which indicates there is a significant relationship between PB and DV. Thus, H<sub>0</sub> is rejected.

**3. Regression Equation**

$$\text{Awareness} = 13.190 + -0.256(\text{PT}) + -0.234(\text{PE}) + 0.350(\text{PF}) + 0.509(\text{PB})$$

Predictor Constant = Awareness

PT = Perceived Threat

PE = Perceived Efficacy

PF = Perceived Fatalism

PB = Perceived Benefit

The coefficient table 4.18.4 shows that is a significant positive relationship between perceived threat, perceived efficacy, perceived fatalism and perceived benefit with

awareness. According to the table, perceived benefit has the highest influence towards awareness with  $\beta$  0.509. In conjunction, if a unit increase in perceived benefit will affect an increase of 0.509 unit of awareness towards stem cell treatment. Thus, perceived benefit has the strongly affect towards awareness.

Besides that, perceived fatalism is the second important to bring an influence towards awareness where it score  $\beta$  0.350. Lastly, perceived threat and perceived efficacy has the lower impact towards the awareness which only score  $\beta$  -0.256 and  $\beta$  -0.234 which is the lower among other variables. Based on the linear equation, perceived threat and perceived efficacy has a negative relationship with awareness, -0.256 and -.0.234 will make each unit increase in perceived threat and perceived efficacy cause a decrease of 0.256 and 0.234 unit towards awareness.

#### **4. Discussion of “Comparison with past empirical studies”**

Based on the coefficient table 4.18.4, there is a significant relationship between perceived threat, perceived efficacy, perceived fatalism and perceived benefit with the awareness. In addition, the result in this research show that significant value of independent variable (perceived threat, perceived efficacy, perceived fatalism and perceived benefit) is 0.031, 0.010, 0.002, and 0.000 which is less than 0.05. Therefore, there is a significant relationship between all independent variable and dependent variable.

From the past empirical studies, Smalece and Klingle (1999) cites a significant main effect for threat was found, with high threat messages perceived more threatening. According the past studies, Smalec and Klingle (1999) stated that a significant main effect was found for efficacy on cognitive message acceptance. Beside that, Victoria, Celette, Usha, Susan, Patrick, Brian & Joanne (2004) has stated that perceived benefit were significant in uniquely predicting fear. Last but not least, researchers have indicated that the four variables (perceived threat, perceived efficacy, perceived fatalism and perceived benefit) were significant in uniquely predicting fear, even after

controlling for each other. Additionally, the 4 variables were highly significant for predicting fear (Victoria, Celette, Usha, Susan, Patrick, Brian & Joanne, 2004).

## **4.4 Data Finding**

Based on the result in this research, we have better understand of the effectiveness of fear appeal messages in creating awareness about stem cell in the Malaysia market. By using the inferential analysis to test the construct validity of theoretical relationships, all the result shows that all the four independent variables have significant relationship with the dependent variables. Therefore, by using the fear appeal messages can raise or influence public awareness towards the usage of stem cell.

## **4.5 Conclusion**

In this chapter 4, we use SPSS version 17.0 to analysis and examine the data that had been complete by the respondents. The table in this chapter also shows out the relationship between perceived threat, perceived efficacy, perceived fatalism and perceived benefit and awareness. Thus, the four hypotheses proposed in this research were clarified. The discussion on implications, limitation and conclusion will be presented in the next chapter.



## **CHAPTER 5: DISCUSSION, CONCLUSION, AND IMPLICATION**

### **5.0 Introduction**

In chapter 5, it highlights overall conclusion and discussion of the entire research. Firstly, it provides the summary descriptive of the entire descriptive and inferential analyses which are interpreted in chapter four. Next, it followed with the discussion and major findings to validate the research objective and hypotheses. The preceding section highlights the implication of the study. Lastly, several limitations of the study and recommendation for future research and topic are discussed before summarizing the entire research which concludes the chapter.

### **5.1 Summary of Statistical Analysis**

#### **5.1.1 Descriptive Analysis**

##### **5.1.1.1 Frequency Distribution**

From the analysis of respondent demographic profile done in chapter 4, the percentage for each gender of respondents is nearly equal which male possesses 52.8% and female possesses 47.2%. Most of the respondents in this research are young with the age group of 26 to 34 that possesses 41.6% of the total sample size. Chinese possesses the majority among three races as the respondents which is 71%. The major highest education levels for respondents are college/university

level as they possess 92% respectively. Most of the respondents are work as a post of middle management that possesses 34.8%. The monthly family/household income of the respondent is RM2001-RM3999, possesses 47.6%.

#### **5.1.1.2 Central Tendencies Measurement of Constructs**

The central tendencies analyze the importance of items in terms of mean by using frequency analysis. In the aspect of perceived threat, the statement “You are concerning to the seriousness of contracting an illness and the consequent of bad health.” scored the highest mean 5.21 while the statement “You will try to avoid the likelihood of experiencing health deterioration among your family members, including yourself.” scored the lowest mean of 4.80.

For perceived efficacy, the statement “You believe that an action to response can decrease the fear of infecting illnesses or diseases in future.” scored the highest mean which is 4.45 while the statement “You believe that medical science can cure or prevent an illness or disease from deteriorating.” scored the lowest mean of 4.38.

As for perceived fatalism, the statement “You believe that any illness or diseases suffered by anyone of your family members, including yourself maybe cured.” scored the highest mean which is 5.14 while the statement “You believe the fact that anyone of your family members, including yourself maybe affected by any current or any new illnesses or diseases.” scored the lowest mean of 4.72.

In term of perceived benefit, the statement “You believe that development of medical science can cure current or new illness or

diseases.” scored the highest mean of 5.19 while the statement “You believe that revolution of medical science such as stem cell treatment can help you to reduce the fear of infecting illness or diseases.” Score the lowest mean of 5.00.

Lastly for in term of awareness the lowest mean was scored by statement “You have some knowledge or idea about treatment that can be performed by stem cell.” with 3.9 while the highest mean was scored by the statement “You are eager to continue enhancing your knowledge of stem cell treatment.” with 4.72.

### **5.1.2 Reliability Test**

The Cronbach’s alpha was applied to observe the reliability of 12 items which were used to measure the five constructs (perceived threat, perceived efficacy, perceived fatalism, perceived benefit and awareness). Among the five constructs, awareness has the highest Cronbach’ s alpha which is 0.871, followed by perceived threat 0.829, perceived efficacy 0.799, perceived fatalism 0.778, and perceived benefit 0.716.

### **5.1.3 Inferential Analysis**

#### **5.1.3.1 Multiple Linear Regressions**

Based on the result of regression model in chapter 4,  $R = 0.390$  indicate that there is a positive relationship between four independent variable perceived threat, perceived efficacy, perceived fatalism and perceived benefit. The  $R^2 = 0.152$  means that 15.2 percent of variation of awareness is explained by perceived threat, perceived efficacy,

perceived fatalism and perceived benefit. The  $F= 10.970$  and with p-value below 0.01, meaning that the regression model is fit to measure awareness by the four independent variable.

The multiple regression equation for this study is formed as following:

$$\text{Awareness} = 13.190 + (-0.256 \text{ PT}) + (-0.234 \text{ PE}) + 0.35 \text{ PF} + 0.509 \text{ PB}$$

$$(-0.128) \quad (0.155) \quad (0.187) \quad (0.267)$$

Where PT = Perceived Threat

PE = Perceived Efficacy

PF = Perceived Fatalism

PB = Perceived Benefit

From the regression model, perceived benefit has the strongest impact toward awareness with a beta value of 0.267 while perceived threat has the weakest impact on awareness with a beta value only -0.128.

### 5.1.3.2 Pearson's Correlation

Pearson's correlation was applied to analyze the strength of association among the five constructs. All four independent variables perceived threat, perceived efficacy, perceived fatalism and perceived benefit which are 0.029, 0.047, 0.000, and 0.000 where are less than 0.05. This result proves that there have positive relationships with awareness. All constructs were significant at the 0.0000 level.

## 5.2 Discussion of Major Finding

Based on the result in Chapter 4, the research objectives, research question and hypotheses generated are discussed in following sections, including a summary of each hypotheses testing result.

Table 5.2: Summary of the Result of Hypotheses Testing

Hypotheses	Supported	Not Supported
H1: Perceived threat of fear appeal can significantly raise public awareness.	B= -0.256 p= 0.031 (p<0.05)	
H2: Perceived efficacy of fear appeal can significantly raise public awareness.	B= -0.234 p= 0.010 (p<0.05)	
H3: Perceived fatalism of fear appeal can significantly raise public awareness..	B= 0.350 p= 0.002 (p<0.05)	
H4: Perceived benefit of fear appeal can significantly influence public awareness towards the usage of stem cell.	B= 0.509 p= 0.000 (p<0.05)	

Source: Developed for the research

### H1: Perceived threat of fear appeal can significantly raise public awareness

From the Pearson Correlation analysis, there is not standardized coefficient of Beta H1 is -0.256 with p-value is 0.031. H1 is supported because p-value is less than 0.05 which indicates there is a significant relationship between perceived threat and awareness. Witte, 1994 defined threat as a harmful thing that long exists in the

environment with or without knowledge of the target audience. The term "threat" is a highly anthropocentricone, suggesting a human concern that these coastal environmental systems are in danger of degradation- or even destruction- from such pressures (e.g., Hannah, 1968a, b, c). Threat represents the degree to which one feels susceptible to a serious risk and is composed of two dimensions of susceptibility and severity (Hyunyi and Kim, 2005).

H2: Perceived efficacy of fear appeal can significantly raise public awareness.

In addition, standardized coefficient of Beta for H2 is -0.234 with P-value is 0.010. H2 is supported because the P-value is less than 0.05 which indicates there is significant relationship between perceived efficacy and public awareness towards stem cell. According to Mimi (2002), self-efficacy can measure at different levels of specificity. Bandura (1997) stated that the optimal level of generality at which self-efficacy is assessed varies depending on what one seeks to predict and the degree of foreknowledge of the situational demands" (p. 49). Bandura (1977) proposed the theory of self-efficacy of its applicability has been tested widely in many disparate areas. Researchers have consistently stated that perceptions of self-efficacy, or beliefs in one's own abilities to realize desired outcomes, play a critical role in determining people's subsequent functioning, adaptation, and attainments (Bandura, 1995, 1997).

H3: Perceived fatalism of fear appeal can significantly raise public awareness.

The result in this study revealed that perceived fatalism has significant effect on public awareness. The result is stated as Beta=0.350 at p-value=0.002. H3 is supported because p-value is less than 0.05 which indicates there is significant relationship between perceived fatalism and awareness. Fatalism is belief in an external locus of control over the events in one's life. In the former the individual believes that he or she is more or less at the mercy of the environment, while in the latter the individual believes that he or she can master, control, or effectively alter the

environment. Rotter, Chance, and Phares (1972) and others (Jessor, Graves, Hanson, & Jessor, 1968; Kohn, 1972, 1974; Wheaton, 1980) view fatalism as cognitive orientations learned through social interaction.

H4: Perceived benefit of fear appeal can significantly influence public awareness towards the usage of stem cell.

From Table 5.2 shows that Beta for H4 is 0.509 with p-value is 0.000 which perceived benefit has significantly influence public awareness towards the usage of stem cell. In this research, the strongest association falls between perceived benefit and awareness towards stem cell. Most of the customers who get influence towards the usage of stem cells are because of the reason of perceived benefit. Researcher supported that perceived benefit from action can influence people to change attitude into a positive way. Benefit will help to decrease the fear barriers to know and lead to physical action (Peterson, Witte, Enkerlin-Hoeflich, Espericueta, Flora, Florey, Loughran, & Stuart, 1994; Witte, 1992). Hence, H4 alternative is supported.

## **5.3 Implication of the Study**

### **5.3.1 Managerial Implication**

This research exploded a structured model that examines the relationship among perceived threat, perceived efficacy, perceived fatalism, perceived benefit and awareness in general field. Moreover, this research shows that all the four variables perceived threat, perceived efficacy, perceived fatalism, and perceived benefit have a significant impact on awareness. It is essential for

both researchers and businessperson to fully understand the insight of each variable that would make up the awareness.

Based on the result of our study, perceived fatalism was found significant correlated to awareness. According to Rotter (1966), fatalism is a generalized expectation that outcomes of situations are determined by forces external to one's self, such as powerful others, luck, fate, or chance. Fatalism is therefore a belief in an external locus of control over the events in one's life. In the former the individual believes that he or she is more or less at the mercy of the environment, while in the latter the individual believes that he or she can master, control, or effectively alter the environment. Rotter, Chance, and Phares (1972) and others (Jessor, Graves, Hanson, & Jessor, 1968; Kohn, 1972, 1974; Wheaton, 1980) view fatalism as cognitive orientations learned through social interaction.

Referring to the study conducted, perceived benefit has the highest impact on awareness. Perceived benefits are the outcomes associated with integration that is valued by individuals and organization. Benefits are different from reasons although the two are often the same. For examples, customer service, competitive advantage, lower costs. Strategic benefits consist of six items which are new opportunities, reputation and prestige, leverage size, marketing, competitive advantage, and empower employees. It should be obvious that these are business benefits. Cost savings or economic advantages are the set of primary benefits that typically first come to mind when one talks with people about the benefits of integration. Enabled benefits are those benefits made possible by integration. They include standard business practices, better processes and business practices, improved overall understanding of the organization, and an improved work environment.



As for perceived efficacy, it is shown in the study to have exerted an influence on awareness. Self-efficacy refers to the person's belief or perception that he or she has the ability to perform the recommended attitude (Lauren and Punam, 1999). According to Mimi (2002), one can measure self-efficacy at different levels of specificity. Bandura (1997) stated that the optimal level of generality at which self-efficacy is assessed varies depending on what one seeks to predict and the degree of foreknowledge of the situational demands" (p. 49). Bandura (1977) proposed the theory of self-efficacy of its applicability has been tested widely in many disparate areas. Self-efficacy can also be referred to as perceptions of one's ability to carry out the coping response, may be the most important dimension for some situations, especially in situations where the perceived possibility of the threat is "very real", or omnipresent, such as women's fear of rape (Snipes, Micha and Robin, 1999). According to Snipes, Micha and Robin (1999), Leventhal, Watts and Pagano, 1967; Sutton and Eiser, (1984) states that research supports the notion that self-efficacy is important in gaining adoption of a coping response.

Through the study, perceived threat had a significant impact on awareness. Threat is defined as a malevolent actor, whether an organization or an individual, with a specific political, social, or personal goal and some level of capability and intention to oppose an established government, a private organization, or an accepted social norm. The goal of a threat is considered to be the threat's overall intent, the end-result the threat is trying to achieve (e.g., the overthrow of a leading political party). In contrast, a threat's objective is simply a task, such as a specific attack, that must be accomplished to progress toward the goal (David, Sherry, Cynthia and Laura, 2007). (Categorizing threat)

As a conclusion, perceived threat, perceived efficacy, perceived fatalism, and perceived benefit are significant sources in creating awareness in Malaysian

market. Researcher must take all this into account seriously as each of them may serve as an opportunity for a firm to make awareness in a Malaysian market.

### **5.3.1.1 Implication to Private Business**

Currently, the market for stem cells is distinctly immature. Only 10 private firms in the United States were actively involved in embryonic stem-cell research in 2010, spending a total of just \$70 million. Over time, however, this type of business is likely to expand dramatically, following along the well-trod path of similar breakthrough technologies. As the science matures, there will also be firms with the capacity to supply these very same products. And once demand and supply exist together, they will naturally create a market. Governments can try to prohibit or constrain this market; they can push the market abroad or underground. But history suggests that such prohibitions will inevitably be short-lived, because if demand is intense enough and supply available, then would-be buyers and sellers will eventually constitute a market of their own, either by circumventing the law or by pushing the state to relax its restrictions.

In Malaysia, there have a first world-class stem-cell research therapy. The goal is to develop cell based therapeutics using human adult stem cells derived from bone marrow. This facility further expands the commercialization and application of innovative research ideas for the treatment of diseases using stem cells. The establishment of the world class laboratory is a significant step with multiple benefits. The first benefit is enhancing foreign direct investment of up to RM20 million

to Malaysia. The second benefit is to build up a wealth of resource in international research and expertise. Finally is to expand access and exposure for Malaysian talent in stem cell research.

Meanwhile, Government of India reported that the Department of Biotechnology has allocated more than Rs. 300 over the last five years towards basic and applied research in stem cell technology. Since the programme is government funded, it focuses on diseases that affect millions of Indians rather than exotic diseases and reminds one of its vaccine programmes. The entire government directed effort is in understanding the fundamentals of how stem cells work and conducting clinical trials to gauge the effectiveness of the therapy. In this case, it will gain a lot of opportunity for Indian to enter into the stem cells therapy market.

### **5.3.1.2 Implication to Public Policy**

Scientists think that stem cell research is important to the future of medicine because with adequate research, stem cells have the potential to treat degenerative conditions by transplanting human stem cells into patients. Presently, many of these chronic conditions have no cure and are managed by treating the symptoms. While the initial cost of receiving stem cell therapy may be high, it has the potential to outweigh the lifelong costs ensured through daily medications and hospitalizations. By making disease management easier, the quality of life for those diagnosed with this disease and their family members would be greatly included. With sufficient development of stem cell medicine, chronic diseases such as diabetes, heart disease, and Parkinson's disease will be effectively managed.

Nearly 1 in a million people in the U.S. are diagnosed with Parkinson's disease. Parkinson's disease is a movement disorder with symptoms that include debilitating tremors that continue and worsen with time. Patients diagnosed with Parkinson's disease take a variety of medications in different doses to manage the symptoms of the disease. The varieties of medications are often confusing, causing individuals to miss doses. Stem cell therapy may reduce and prevent the progression of Parkinson's symptoms when destroyed dopamine-secreting neurons are replaced, improving the patient's quality of life and reducing drug costs. More than half million of Americans suffer have their first heart attack every year, resulting in injury to the heart and scarring that contributes to the gradual loss of the heart's pumping strength. Of the 1.5 million heart attacks per year in the U.S., approximately 500,000 result in fatalities. While stem cell research has not yet proposed that they will be able to reduce the occurrence of heart attacks, it is believed with refinement of current research, doctors may be able to someday reduce damage to the heart muscles if stem cells are administered after a heart attack.

#### **5.4 Limitation of the Study**

The limited information regarding of stem cells in Malaysia industry consider one of the limitation of the research. This is because most of our journals are come from other countries such as United State of America, South Africa, and other European countries. Hence some information taken outside Malaysia might not applicable to Malaysian. Not only this, the information obtains from other country might not accurate represent the findings about stem cell in Malaysia industry.

Furthermore, the limitation for the research will be respondents. The total of respondents is only 250. The amount of respondents of our study is not enough to represent the Malaysian market. Therefore, the findings from the research study cannot be used to generalize for all potential customers throughout the entire Penang area.

Moreover, due to the usage of some jargons in the questionnaires, there may be a tendency that respondents may misinterpret the meaning of any particular words in the questionnaire. Even though initiatives were taken by team members to clarify the doubts and queries of respondents, there may be probability that some respondents could not catch the meaning of the explanation. Thus this may lead to some inconsistency with the final result.

Lastly, the research study carried out in Penang areas, the result of study may not be generalized to population in other states in Malaysia, as it is not representative enough.

### **5.5 Recommendation for Future Research**

Due to the limitation of small sample sizes that covers only Penang area, this study can expand its coverage in terms of the target population to not only respondents in Penang area, instead, the study should covers the all states in Malaysia. Even though Penang is the second fastest growing state in the country in terms of economy, yet the perception of consumers in each of states differs. Thus a larger sample size that covers respondents throughout Malaysia would lead to a better understanding of the overall perception behavior of customer and not only those in Penang. Except this, we also can try to target foreign patients. So, the research results will become more reliable.

In order to solve the issue of doubts and queries of respondents towards the questionnaire, future researchers are recommended to design a more comprehensive questionnaire that utilize short, simple, and common terms. Simplicity of questions is highly recommended as this will eliminate the happening of confusions and biasness. In addition to that, to cater to the needs of respondents, developing questionnaire in different languages such as Malay and Chinese language may also ease their confusion.

The research study should use other type of sampling technique. In this research, quota sampling and judgmental sampling are used. In future, researchers are suggested rely on other types of sampling technique such as systematic sampling. By systematically draw considerable amount of samples from each area in Penang, the equal-probability method can make the result more reliable. For instances, using systematic sampling the researcher can choose every 10<sup>th</sup> or 15<sup>th</sup> potential customer to conduct the study on this sample.

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Appendix 1: Questionnaire

**SURVEY ON THE INFLUENCE OF FEAR APPEAL MESSAGES ON  
CREATING AWARENESS OF STEM CELL THERAPY IN MALAYSIAN  
MARKET**

Dear Participant,

We are students of Universiti Tunku Abdul Rahman (UTAR), currently pursuing Bachelor of Marketing. We are conducting a study to explore how effective fear appeal messages can be influence people and make people aware of the existence of stem cell therapy. This study represents part of our final year project for the Bachelor's Degree program.

The validity of the study is highly depends on your truthful and honest opinions. Your opinions are based on your own beliefs, feelings, and experiences. Opinions and information provided will be held strictly in private and confidential. Responses from all participants will be analyzed on an aggregate basis, and the findings would be used for academic purposes only.

Your co- operation in answering this questionnaire is highly appreciated.

Thank you.

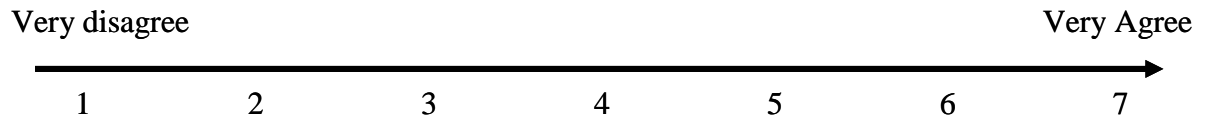
Yours truly,

CHAN WEI CHUEN	(09 ABB 07601)
LEE CHIN WAI	(09 ABB 05319)
LEONG SIR XIAN	(09 ABB 06740)
TAN JIAN LIN	(09 ABB 05600)
TANG WAI KHUEN	(09 ABB 06523)



**SECTION A**

Please indicate your opinion by circling only one scale (from the seven scales) indicated below.



**IV 1: Perceived Threat**

**1<sup>st</sup> attribute: Susceptibility**

*Q.1* You will try to avoid the likelihood of 1 2 3 4 5 6 7  
 experiencing health deterioration among your family  
 members, including yourself.

**2<sup>nd</sup> attribute: Severity**

*Q.2* You are concerning about the seriousness of 1 2 3 4 5 6 7  
 contracting an illness and the consequent of bad  
 health.

**IV 2: Perceived Efficacy**

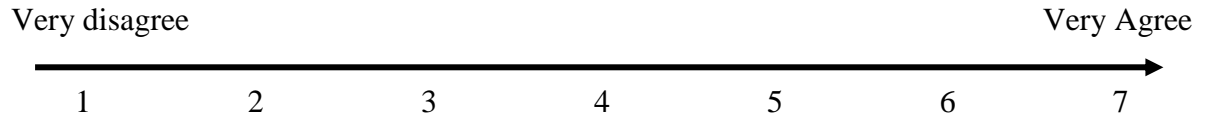
**1st attribute: Response efficacy**

*Q.3* You believe that an action to response can 1 2 3 4 5 6 7  
 decrease the fear of infecting illnesses or diseases in  
 future.

**2<sup>nd</sup> attribute: Self-efficacy**

*Q.4* You believe that medical science can cure or 1 2 3 4 5 6 7  
prevent an illness or disease from deteriorating.

Please indicate your opinion by circling only one scale (from the seven scales) indicated below.



**IV 3: Perceived Fatalism**

**1<sup>st</sup> attribute: Fact**

Q.5 You believe the fact that anyone of your family members, including yourself maybe affected by any current or any new illnesses or diseases.      1    2    3    4    5    6    7

**2<sup>nd</sup> attribute: Fate**

Q.6 You believe that any illness or diseases suffered by anyone of your family members, including yourself maybe cured.      1    2    3    4    5    6    7

**IV 4: Perceived Benefit**

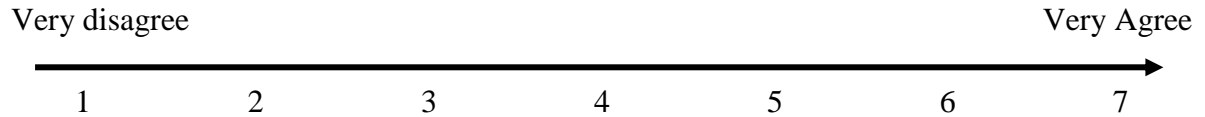
**1<sup>st</sup> attribute: Useful**

Q.7 You believe that revolution of medical science such as stem cell treatment can help you to reduce the fear of infecting illness or diseases.      1    2    3    4    5    6    7

**2<sup>nd</sup> attribute: Advantage**

Q.8 You believe that development of medical science can cure current or new illness or diseases.      1    2    3    4    5    6    7

Please indicate your opinion by circling only one scale (from the seven scales) indicated below.



**DV: Awareness**

**1<sup>st</sup> attribute: Consciousness**

Q.9 You are aware of stem cell treatment.                      1    2    3    4    5    6    7

**2<sup>nd</sup> attribute: Knowledge**

Q.10 You have some knowledge or idea about                      1    2    3    4    5    6    7  
 treatments that can be performed by stem cell.

**3<sup>rd</sup> attribute: Realization**

Q.11 You will support or accept credible news                      1    2    3    4    5    6    7  
 about the treatments that can be performed by stem  
 cell.

**4<sup>th</sup> attribute: Cognizance**

Q.12 You are eager to continue enhancing your                      1    2    3    4    5    6    7  
knowledge of stem cell treatment.

**SECTION B: PARTICIPANT PROFILES**

For statistical purpose, please tick (√) on the appropriate box that could best reflect about yourself.

- 1) Gender  Male  Female
- 2) Age (years)  < 25  26-34  35-44  
 45-54  >54
- 3) Race  Malay  Chinese  Indian  
 Others
- 4) Level of Education  Secondary school or less  College University
- 5) Occupation  Clerical  Middle management post  
 Managerial post  Others, please specify\_\_\_
- 5) Monthly Family/Household Income  < RM 2, 000  RM 2, 001-3,999  
 RM 4, 000 - 5, 999  RM 6, 000 – 7,999  
 >RM 8, 000

**Thank you for taking your time to complete this survey.  
 Your opinions are highly appreciated.**