

**PATIENTS' SATISFACTION WITH HOSPITAL FOOD
PROVISION AT GOVERNMENT HOSPITALS IN MALACCA**

by

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KAJIAN KEPUASAN PESAKIT TERHADAP PENYEDIAAN MAKANAN HOSPITAL DI HOSPITAL-HOSPITAL KERAJAAN DI MELAKA

ABSTRAK

Pengambilan makanan hospital dalam kalangan pesakit seringkali tidak mencukupi disebabkan ianya tidak memenuhi citarasa dan tabiat makan pesakit. Kajian keratan rentas ini telah dijalankan untuk memahami kepuasan pesakit terhadap pelbagai aspek penyediaan makanan di Hospital Besar Melaka, Hospital Jasin dan Hospital Alor Gajah. *Wesley Hospital Foodservice Patient Satisfaction Questionnaire* (WHFPSQ) telah diadaptasi dan digunakan untuk mengumpulkan data daripada pesakit pada bulan Januari-Februari 2015. Teknik persampelan rawak telah digunakan untuk merekrut 111 orang pesakit berumur 11-72 tahun, diberikan diet normal dan pesakit yang telah tinggal di hospital ≥ 1 hari. Data menunjukkan kebanyakan pesakit terdiri daripada mereka yang berumur 30-39 tahun ($n=28$, 25%), lelaki ($n=69$, 62%) dan telah berada di hospital selama 2-7 hari ($n=80$, 72%). Secara amnya, pesakit-pesakit merasakan bahawa tiada banyak pilihan makanan disediakan dan mereka tidak dapat memilih menu makanan yang sihat. Aspek-aspek berkaitan kualiti makanan (rasa, perisa, cara sayur-sayuran dimasak dan jangkaan terhadap makanan), isu berkenaan staff/servis (tingkah laku, penampilan dan sikap membantu) serta kebenaran untuk memilih saiz hidangan menunjukkan perkaitan yang signifikan dengan kepuasan pesakit terhadap makanan hospital secara keseluruhannya ($p<0.01$). Faktor persekitaran fizikal termasuk bau ($r=0.239$) dan bunyi bising ($r=0.230$) juga mempunyai perkaitan yang signifikan dengan kepuasan pesakit terhadap makanan hospital ($p<0.05$). Tempoh tinggal di hospital mempunyai perkaitan secara negatif ($r=-0.338$, $p<0.01$) dengan kepuasan pesakit terhadap makanan dan hal ini menunjukkan bahawa semakin lama pesakit tinggal di hospital, semakin menurun tahap kepuasan terhadap makanan hospital. Tiada perkaitan yang signifikan didapati antara pilihan makanan, menu sihat, tekstur serta suhu makanan dengan kepuasan pesakit terhadap makanan hospital secara keseluruhan. Meskipun keputusan kajian agak memuaskan, faktor-faktor berkaitan dengan makanan dan servis didapati mempunyai pengaruh terhadap kepuasan pesakit. Kepuasan terhadap makanan menunjukkan tahap pengambilan makanan dalam kalangan pesakit. Justeru, hasil kajian ini boleh digunakan untuk tujuan penambahbaikan penyediaan makanan dengan mengambilkira faktor-faktor yang mempengaruhi tahap kepuasan pesakit terhadap makanan hospital.

PATIENTS' SATISFACTION WITH HOSPITAL FOOD PROVISION AT GOVERNMENT HOSPITALS IN MALACCA

ABSTRACT

Patients' hospital food consumption is often compromised, mainly because it is not reflective of their preferences and eating habits. This cross-sectional study was conducted to understand patients' satisfaction with various aspects of food provision in Malacca General, Jasin and Alor Gajah Hospitals. The Wesley Hospital Foodservice Patient Satisfaction Questionnaire (WHFPSQ) was adapted and used to collect the data throughout January and February 2015. Simple random sampling method was used to recruit 111 patients, aged 11-72 years, who received normal diet and had been admitted for ≥ 1 day. Most of the patients were aged 30-39 years old (n=28, 25%), were male patients (n=69, 62%) and were hospitalised for 2-7 days (n=80, 72%). Majority were satisfied with hospital food (n=78 70.3%). In general, patients felt that not enough food choices were available and they were not able to choose healthy meals. Nevertheless, they felt staff who delivered their food were friendly, helpful and looked presentable. Food quality aspects (taste, flavour, method of vegetable cooked and expectation of quality of food), staff/service factors (staff behaviour, appearance and helpfulness) and portion size were significantly associated with overall satisfaction with hospital food ($p < 0.01$). Physical environment, including odour ($r = 0.239$) and noises ($r = 0.230$) were also significantly associated with overall satisfaction with hospital food ($p < 0.05$). Length of stay showed negative association ($r = -0.338$, $p < 0.01$) with overall satisfaction, indicating that the longer they stay, the less satisfied they were with hospital food. However, no association was found between food choices, healthy meals, food texture and temperature with overall satisfaction. This study revealed that although overall satisfaction with hospital food was satisfactory, various factors including food and service elements affected patients' satisfaction. Satisfaction often reflects patients' actual food consumption. Therefore, findings of this study are useful in improvising provision of food, by taking into account the aspects that affected their satisfaction.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Hospital food provision is known to contribute significantly in supporting patients' recovery mentally and physically (Johns, Hartwell & Morgan, 2010). Rising competitiveness among healthcare providers, patients' involvement in decision-making process related to their own health is becoming more common. Patients are also becoming more critical about the service quality which they receive (Lim & Tang, 2000). According to Richard Oliver's theory of disconfirmation expectancy, users or customers buy a certain product/ service with an expectation of its performance (Joung, 2009). This theory explains how satisfaction occurs, which is the result of positive disconfirmation that emerges when patients' expectation of the product/service matches the outcome. In this study, the aim is to investigate the factors influencing patients' satisfaction with hospital food during their stay. According to Demir & Celik (2002) and Sheehan-Smith (1998), the service they are receiving will determine their level of satisfaction and foodservice quality is known to influence patients' satisfaction during hospital stays (Kim, Kim & Kyung, 2010).

Food intake is important to the patient especially during their hospitalization for the sake of recovery and meeting patients' nutritional requirements. However, food consumption among hospitalized patients is often compromised, as it is not reflective of the patients' preferences and eating habit. This will lead to other health issue such as malnutrition and prolonged stay in the hospital. Previously, it was reported that malnutrition among hospitalized patients was caused by several factors with one major cause being inadequate dietary intake (Kondrup et al., 2002; Aquino &

Philippi, 2011). Malnutrition among hospitalized patients is still one of biggest challenges for the healthcare providers. Malnutrition among hospitalized patients is a critical issue and has been associated with a significant increase in mortality and morbidity (Waitzberg, Caiaffa and Correia, 2001). Malnutrition directly increases length of hospital stay and costs, and indirectly affects the cost of patients' rehabilitation (Waitzberg et al., 2001).

In Malaysia, there are evidence showing the occurrence of nutritional transition – a term refers to shifts in diet, physical activity, health, and nutrition (Khambalia et al., 2012) among Malaysian adolescents and adults (Ismail, 2002). This results in the problem of co-occurrence of both undernutrition and overnutrition in this country. Malaysians' dietary intake pattern is worrying as data from food balance sheet shows increases of calorie, protein and fat intake from 1961-1997.

This dietary pattern can also be seen in hospitalized patients who expressed their dissatisfaction towards monotony of hospital menu, stating that they were not served with typical heavy Malaysian breakfast, tea break and morning beverage in addition to insufficient amount of food provided (Chong, Esah & Wen-Yen, 2003). Excessive fat and sugar intake may worsen the patients' nutritional status. Even though it is understandable that influence of culture and eating habit of a population should be considered while studying patients' satisfaction with food (Chong et al., 2003), nutritional requirements of the patients must be balanced with their gustatory needs.

Patients hospitalised may have their own opinions regarding the choice, preference, timing of food consumption, presentation of food and ultimately satisfaction with food served to them during hospitalisation, since their nutritional requirements relies on hospital food (Stanga et al., 2003). Patients who stayed longer in the hospital who

may review food quality more critically compared to patients who have shorter stay in a hospital. For patients who are ill, lesser satisfaction with hospital food may be a temporary annoyance meanwhile food is an important and ongoing contributor to the quality of life for chronically-ill patients (O'Hara et al., 1997).

Understanding patients' perception and satisfaction of hospital food is important as it will reflect on their overall opinions about the foodservices provided by the hospital. Information gathered is also important to the hospital's Dietetics and foodservice department to create appealing and tasty (O'Hara et al., 1997). This is because patients' satisfaction reflects their consumption. Nutritional and sensory quality is related to patients' satisfaction with hospital meals (Sahin et al., 2006; Sahin et al., 2007; Johns et al, 2010) which are also useful parameters to mark the effectiveness of food service systems of the hospital (Engelund et al., 2007; Johns et al., 2010), which are included in this study.

By taking into consideration the various factors that influences patients' food consumption, the questionnaire used in this research is adapted from the Wesley Hospital Foodservice Patient Satisfaction Questionnaire (WHFPSQ) had been tested and proved validated in a research in Australia (Wright, Capra & Aliabakri, 2003). The questionnaire includes factors such as the food quality, meal services, staff/service issues and physical environmental of the hospital on patients' satisfaction with hospital food provision. We are using this questionnaire as it provides several relevant factors that may influence patients' acceptability and consumption of hospital food. There are no research had been done in Malaysia using this questionnaire to study patients' satisfaction with hospital food. The dimensions of satisfaction in this questionnaire are applicable to Malaysian hospital food.

1.2 Problem Statement

Study on patients' satisfaction had been carried out to understand patients' (healthcare consumers), view on the services they receive. In one way, it helps the management of hospital or healthcare providers to improve the service quality, where patients' opinions can be used in developing the management principles (Raheem et al., 2014). The service providers should first understand the consumers' needs and factors that influence their satisfaction with the overall services, including service of food in order to provide an excellent healthcare service. Therefore, assessing patients' satisfaction is very important, as it predicts patients' utilisation of healthcare services and compliance towards treatment (Al-Eisa et al., 2005; Hizlinda et al., 2012). In other words, satisfied patients tend to take on an active role in their own healthcare (Hizlinda et al., 2012).

Meeting patients' nutritional requirement will help them to recover faster (Iff et al., 2008), as patients' nutritional requirement depends on the food served during hospitalization. Poor intake of food and drink can result in undernutrition, which is a common worldwide problem among hospitalized patients (Jessri et al., 2011). Undernutrition is common and associated with numbers of negative clinical outcomes, as a result of poor food consumption (Naithani et al., 2008). Besides, admission to hospital can be possibly associated to nutritional status deterioration for both malnourished and undernourished patients (Naithani et al., 2008).

According to United Nation (UN)'s Standing Committee of Nutrition (SCN), malnutrition is the largest single contributor to diseases in the world. It is stated that a malnourished person find themselves having difficulty to perform a normal bodily function such as growing and resisting diseases (World Food Program, 2014).

Malnutrition among hospitalized patients is the result of some factors and might also be the effect of their diseases and/or the treatments (Raslan et al., 2010). However, their condition can be improved with proper diet consumption. It was also found that there was a correlation between presence of malnutrition among hospitalized patients and its consequences such as increased frequency of hospital complications and mortality, impact on costs and hospital length of stay. Prolonged hospital stay results in worsening malnutrition risk among the patients (Raslan et al., 2010). Therefore, ensuring that adequate nutrition is given to the patients is essential in clinical care, as recommended by the Council of Europe (Naithani et al., 2008).

Dissatisfaction with foodservice in hospitals may reduce patients' dietary intake, subsequently declining their nutritional status and in long term this may lead to malnutrition among patients, all while bearing their own disease condition in the first place. Thus, satisfaction study is necessary to tackle this issue and prevent the patients from having a worse health condition.

1.3: Significance of the Study

Since 1980's, studies on patients' satisfaction had been extensively done worldwide (Evans et al., 2007; Mpinga & Chastonay, 2011; Hizlinda et al., 2012). Research related to hospital food was conducted in Malaysia a decade later, however the findings were not published (Haliza et al., 2005; Hizlinda et al., 2012). Even though quite a number of studies had been done in Malaysia related to patients' satisfaction of overall hospital services, research on satisfaction of food and service are scarce, and there is none that of from government hospitals in Malacca had been found published. Considering the large number of residence in Malacca which is 0.82 million or 493 persons per km² (Department of Statistics Malaysia, 2010), studies on

patients' viewpoint of hospital food and service should be carried out, as it will reflect the quality of healthcare services and patients' acceptance, particularly regarding hospital food. Information gathered can be used to improve provision of hospital food in Malacca.

1.4: Rationale of Study

This study aims to investigate the patients' satisfaction with hospital food in government hospitals in Malacca. Ensuring that patients meet their nutritional requirements is important for the recovery process. For that, dietary intake should always be monitored by taking into account acceptability of food. This is because acceptability of available food influences patients' dietary intake in hospitals (Sahin et al, 2007; Jessri et al., 2011). Understanding acceptability of food among patients can only be assessed by directly approaching the patients themselves, which is often measured using questionnaire (Ferguson, et al., 2001; Jessri et al., 2011). Knowing patients' expectations of hospital food is necessary to improve the quality of healthcare service in a hospital.

This study was carried out mainly because feedback on patients' perception of hospital food would help the hospital management to make appropriate decisions towards improvement (Chong et al., 2003), as improvement can be made by understanding patients' view (Williams, Virtue & Adkins, 1998). One example of improvement based on patients' satisfaction was by providing "room service" can improve food intake and satisfaction (Johns et al., 2010).

To date, there is no study regarding patients' satisfaction with food provision at government hospitals in Malacca. There are three government hospitals in this state which are Malacca General Hospital, Alor Gajah Hospital and Jasin Hospital. The

Malacca General Hospital is the main hospital in Malacca located in the district of Melaka Tengah, which accommodates a total of 901 beds. Alor Gajah and Jasin Hospital have lesser beds (78 and 76 respectively) and are located in districts which are relatively smaller than Melaka Tengah. Information gathered through this research will provide insight to current food provision practices in these hospitals. Such data will be useful in improving food provision for patients in government hospitals of Malacca.

1.5: Objectives

1.5.1: General Objective

To assess the patients who are on normal diet's satisfaction of hospital food in government hospitals in Melaka using the Wesley Hospital Foodservice Patient Satisfaction Questionnaire (WHFPSQ)

1.5.2: Specific Objectives

1. To compare the difference between patients' level of satisfaction with hospital food according to demographic attributes (gender and length of stay).
2. To determine the associations between selected factors which included food quality, meal service quality, staff/service issues and physical environment with patients' satisfaction of hospital food provision.

1.6: Research Questions

1. What are the differences between patients' level of satisfaction with hospital food according to gender?

2. What are the association between length of hospital stay and patients' satisfaction with hospital food provision?

3. What are the association between selected factors (food quality, meal service quality, staff and eating environment) with patients' satisfaction with hospital food provision?

1.7: Hypothesis

H₀1: There is no significant difference between overall satisfaction between male and female patients.

H_a1: There is a significant difference between overall satisfaction between male and female patients.

H₀2: There is no significant association between length of stay and overall satisfaction

H_a2: There is a significant association between length of stay and overall satisfaction

H₀3: There is no association between food quality and patients' satisfaction with hospital food.

H_a3: There is an association between food quality and patients' satisfaction with hospital food.

H₀4: There is no association between meal service quality and patients' satisfaction with hospital food.

H_a4: There is an association between meal service quality and patients' satisfaction with hospital food.

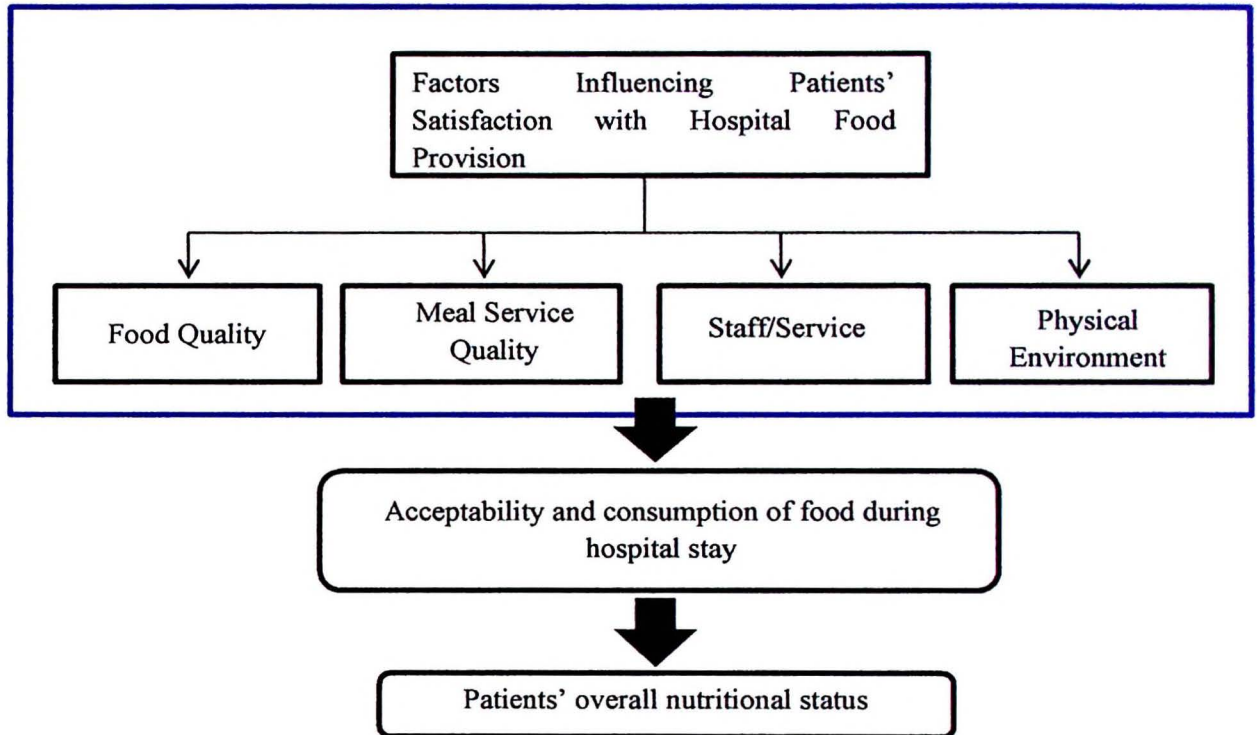
H₀5: There is no association between staff/service and patients' satisfaction with hospital food.

H_a5: There is an association between staff/service and patients' satisfaction with hospital food.

H₀6: There is no association between physical environment and patients' satisfaction with hospital food.

H_a6: There is an association between physical environment and patients' satisfaction with hospital food.

1.8: Conceptual Framework



- Items in the box show the aspects that will be studied in this research.
- Satisfaction influences acceptance of food. Dietary intake in hospital depends on acceptability of food (Sahin et al., 2007; Jessri et al., 2011).
- In turn, acceptability and consumption of food will affect patients' overall nutritional status.

Figure 1.1: Factors that affecting patients' satisfaction with hospital food (original theory by Kapferer, 1997; adapted from Morgan, 2006 and Johns et al., 2009)

Figure 1.1 above shows the conceptual framework that was used in this study. It is based on Kapferer's (1997) conception of brand image creation, adapted by Morgan (2006) and Johns et al (2009). It identifies the selected factors that influencing patients' satisfaction with hospital foods provision (food quality, meal service quality, staff/service and physical environment) that later may affect patients' food consumption and nutritional status.

CHAPTER 2

LITERATURE REVIEW

2.1: Introduction

The purpose of this chapter is to understand the literature on topics related to patients' satisfaction of hospital food. User satisfaction has become an important perspective in the measurement of health service outcome (O'Hara et al., 1997). Meal consumption of hospitalized patients is a good indicator for dietary status and patients' satisfaction with meal service (Kim et al., 2010). According to DeLuco & Cremer, (1990), people do not actually choose a hospital for the food it serves nor did they expect the food to be great while they are stuck in the hospital bed, however poor scores on the hospital food service can give an adverse impact on overall patient satisfaction with the hospital (Deluco & Cremer, 1990; Chong et al., 2003).

Feedback on patients' perception of hospital food would help hospital management in decision-making process towards a quality improvement (Chong et al., 2003). One major cause of malnutrition among hospitalized patients is inadequate dietary intake (Kondrup et al., 2002; Aquino & Philippi., 2011). Dietary intake in hospitals depends upon acceptance of the available food (Sahin et al., 2007; Jessri et al., 2011). To assess patients' acceptability of food, they need to be approached in order to understand how satisfying are the food to them (Ferguson et al., 2001; Jessri et al., 2011). Satisfaction with hospital food can improve patients' dietary intake hence curb hospital malnutrition problem.

This chapter hereby intends to discuss the satisfaction of patients with hospital food in regards to their food acceptability and consumption, as well as how can it helps in

improving hospital foodservice. The concept of satisfaction in general as well as patients' satisfaction with food is discussed. Related studies are included to show the evidence of how patients' satisfaction evaluation is a necessary.

2.2: Improving Hospital Services

Hospitals had been receiving demands to improve their services in these recent years (Chong et al., 2003). Quality service can be viewed as the ability to satisfy consumer needs and expectations (Chong et al., 2003). Healthcare industry, hospitals provide the same type of service, but not the same quality of service (Lim & Tang, 2000). As consumers nowadays become more aware of alternatives on offers and rising in service standard, their expectations on hospital service are also escalating. Thus, improving services can set a different advantage that cannot easily be copied by the hospital's competitors (Lim & Tang, 2000).

The competitive environment in the industry has forced Dietitians to provide high quality food service with limited resources (Kim et al., 2010). Kim also stated that hospital food service aims to provide the hospital in-patients with nutritious food for the health and recovery process, and to present a nutritional model to them with meals tailored according to their diseases conditions. Food service quality is known to be an influence in patients' satisfaction with hospital stays (Demi & Celik 2002; Sheehan-Smith, 2006; Kim et al., 2010). In providing the healthcare services to their customers (patients), a hospital's catering department has to deal with patients' nutritional requirement and individual needs (Iff et al., 2008).

2.3: Satisfaction in general

Since healthcare industry has becomes more competitive and patients have started to be more discriminating about quality, the industry had redefined patients and

recognizing them as customers (Kim et al., 2010). Therefore, customer satisfaction has become essential for an organisation's survival as competition in the service industry increases (Joung, 2009). Consumer satisfaction has been typically conceptualized as either cognitive or emotional response (Giese & Cote, 2000; Joung, 2009). The World Trade Organization stated that customer satisfaction is also a psychological concept of feeling well-being and pleasure results from what one hopes for and expects from a desired product and/or service (Joung, 2009).

Richard Oliver (1990) developed the expectancy disconfirmation theory in which he proposed that customers purchase products or services with a pre-purchase expectation about an anticipated performance. Outcomes after purchasing and using the products/services will be compared against this expectation. If outcome matches the expectation, confirmation occurs. Similarly, disconfirmation emerges when outcomes do not match the customer's expectation. There are positive and negative disconfirmations. When performance is better than expectation, positive disconfirmation occurs, which causes satisfaction (Joung, 2009). Satisfaction is, in summary, the result of the difference between one's expectation and the experienced reality (Capra et al., 2005).

Studies on satisfaction with food among hospital in-patients have been carried out widely (O'Hara et al., 1997; Stanga et al., 2003; Naithani et al., 2008; Johns et al., 2010; Jessri et al., 2011; Theurer, 2011; Messina et al., 2012; Muraal & Davar, 2014) with the purpose to determine the patients' point of view regarding the food provided to them during hospitalization as well as to provide an insight to improvement that could be made about the quality of food service in the hospitals. Patients are essential and important sources of data in understanding the quality of service, especially foodservice (Theurer, 2011). In most healthcare institutions, patients' satisfaction

surveys are administered routinely, as part of the quality control program (Theurer, 2011).

2.4: Factors Influencing Patients' Satisfaction with Hospital Food

Previous studies reported that patients' satisfaction with food provided during period of hospitalization was influenced by several factors (Capra et al., 2005; Hartwell et al., 2007; Messina et al., 2012). Food quality which includes aspects of taste, presentation, preparation and food variety was found to be the most influential predictor of patients' satisfaction (Dube et al., 1994; Messina et al., 2012). However other studies suggested that instead of food quality, staff or service issues (attitude, helpfulness and appearance of nursing staff) were also important factor pertaining to patients' satisfaction with hospital food (Gregoire, 1994; Fallon et al., 2008 and Theurer, 2011).

The survey questionnaire used in this study; Wesley Hospital Foodservice Patient Satisfaction Questionnaire (WHFPSQ), was proved to be a reliable tool in assessing patients' satisfaction with hospital foodservice (Wright et al., 2003). This questionnaire categorized 18 items into factors that highly influence the patients' satisfaction which included food quality and staff/service issues as well as meal service quality and physical environment. These four factors are almost consistent with the results found from the literature (Capra et al., 2005; Messina et al., 2012).

2.4.1: Food Quality

Quality had been vaguely described as "an elusive and indistinct construct" (Kim et al., 2010). In constructing food quality as one of the factors that might influence patients' satisfaction with hospital food and service, questionnaire were developed

and tested with reference to published literature, creative endeavour and consultation with dietitians involved in foodservice department (Capra et al., 2005).

Validated questionnaire of patients' satisfaction with hospital foodservice by Wright et al. (2003) showed that statements regarding hospital meal taste, flavours, choices of menu, texture of meat and vegetables as well as patients' expectation of food and choices of healthy meal are all grouped under "*food quality*" dimension. In addition, food presentation is the major factor in food intake and hence is beneficial for patients' nutritional requirement (O'Hara et al., 1997; Sahin et al., 2007; Johns et al., 2010). The attributes in "*food quality*" (taste, preparation, flavour, variety and presentation) were reported as the best predictors for patients' overall perceived satisfaction with hospital food (Messina et al., 2012).

2.4.2: Meal service quality

Meal service quality describes the conditions of food when it arrives at the patient's bed. Food temperature had been classified as one of the aspects in meal service quality in addition to portion size selection (Wright et al., 2003). The patients' satisfaction research by O'Hara et al. (1997) showed that patients answered "cold food cold enough" as one of the predictor in influencing their satisfaction with hospital food. The study was done during the hottest day of summer, thus it is understandable that patients were more satisfied when the cold food arrived to them completely chilled (O'Hara et al., 1997).

Foodservice system may or may not provide food using isothermal trolleys to maintain the temperature. A research had been done to find out the patients' intake when food is served with and without isothermal trolley (Molero, 2008). Result from the research showed that 90% of the patients served with isothermal trolley rated the

food temperature as good compared to 57.2% of patients who were served with conventional trolley. There was also a significant difference in the amount of food consumed by patients with and without isothermal trolley which were 41% and 27.7% respectively. A study stated that one of the aspects that seems very important to the patients was food temperature (Stanga et al., 2003). Food being transferred from the kitchen to patients' bed often takes some times and the food temperature eventually drops, thus affecting the patients' satisfaction with the food. Patients' dissatisfaction towards food that often arrived lukewarm or cold due to the number of wards and distance from kitchen, was found in a qualitative study conducted in Iranian hospitals (Jessri et al., 2011).

The previous study reported that patients criticised the small portion sizes of food, but judged them against healthy norms (Jessri et al., 2011). Most the patients did not eat all that was served to them mainly because of poor quality of food, and they did not get anything between meals. This caused them to feel even hungrier and needed a larger portion of food during mealtimes than at home (Jessri et al., 2011). Lack of food in between main mealtimes was a significant concern in that study.

Serving time is one of the aspects that affected patients' satisfaction (Naithani et al., 2008). Patients thought that breakfast and evening meal were too early and there was little food being available between mealtimes. This caused dissatisfaction among hospitalized patients. Moreover, the access to available snacks and drinks between mealtimes was lacking and the amount given to patients was inadequate. Since evening meal was served too early, some patients either skipped their meal or were unable to eat when served, which in consequence resulted in them being hungry later in the evening (Naithani et al., 2008). Portion size, however, was proved to be less

important than temperature of the food in determining patients' satisfaction (Hartwell, Edwards & Beavis, 2007).

2.4.3: Staff/ service factor

Staff or nurses in hospitals have pivotal roles in the efforts to improve a hospital's service quality, as they are an integral part in the hospitalized patients' care (Draper, Felland, Liebhaber & Melichar, 2008). A systematic review on patients' emotional needs revealed that the aspects most highly correlated with patients' spiritual/emotional care were *i) staff response to concerns/complaints, ii) staff effort to include patients in decision about treatment and iii) staff sensitivity of the inconvenience that health problems and hospitalization can cause* (Clark, Drain & Malone, 2003). It is clear that staff in hospitals plays a big part in patients' care and thus nurse's role often affects their perception and satisfaction with services offered, inclusive of the food provision.

The role of staff in assisting patients' intake of food during hospitalization had been previously studied by some researchers (Jessri et al., 2011, Johns et al., 2010, Vijayakumaran, Eves & Lumbers, 2009, Naithani et al., 2008). Patients expressed their satisfaction with foodservice staff and admitted that having service staff around provided them with "someone non-medical to talk to" and someone to joke about the food (Johns et al., 2010). Research also found that service staff had a much higher ratio of positive to negative comments overall, as patients seemed very satisfied with the staff service (Johns et al., 2010).

Among patients with physical impairments, elderly and post-surgical patients, it was found that they expressed more dissatisfaction because of lack in support during mealtimes, as they faced greater barriers to eat compared to other patients (Naithani

et al., 2008). Patients thought that it was hard to get attention from staff, and if the meals were left without being eaten during mealtimes, staff assumed that the patients refuse to eat the food so they were removed despite that was not the actual reason for the patients (Naithani et al., 2008). Some patients were unable to feed themselves but they were not helped by the staff.

Even though it was not in their job description, it was found that nurses' refusal to undertake task such as feeding physically impaired patients had caused dissatisfaction among some patients (Jessri et al., 2011). Besides that, complaints were made by patients when food trays were collected by the staff without any comment or asking the patients even if they did not touch the food. Staff's self-hygiene and sanitation were pointed out as the patients stated that the foodservice staff served meals without safety gloves or headwear (Jessri et al., 2011).

In determining patients' satisfaction with hospital food provision, it is vital to pay attention to the services of the staff, particularly those who were delivering meals to patients. Staff or nurses were described as the 'heart and soul' of a hospital and the care provided by them are the major reason why people need to come to a hospital (Draper et al., 2008).

2.4.4: Physical environment

Physical environment can get in the way during eating time, as patients can be distracted by their surroundings. This includes interactions for medical or nursing care, noises and smells from other patients or cleaning being carried out around the patients' beds (Naithani et al., 2008). Protected Mealtimes scheme had been introduced in hospitals in the United Kingdom to allow patients to eat their meals without disruption and enable service staff to provide assistance for patients who

cannot eat by themselves (Royal College of Nursing, 2013). However it is difficult to apply this program in some wards for example on surgical and acute wards where surgeons have consultations during mealtimes and dialysis time of patients in renal wards clashes with their mealtimes (Naithani et al., 2008).

Staff or visitors who misbehave, such as smoking and wards were not cleaned lead to dissatisfaction among patients as well. It was found that ward conditions affected appetite and hence nutrient intake of patients (Jessri et al., 2011). The hustle and bustle in wards creates messy condition and wards are crowded with constant conversations, medical examinations and procedures as well as conversations over mobile phone. This condition worsens during mealtimes due to delivery of the food and plates removal, resulting in further eating inclination among patients. Odour was such a distraction as it wafted from dust bins, drugs, bathrooms and even roommates.

2.5: Issues concerning hospital food consumption

2.5.1: Malnutrition

National Health Service (NHS) United Kingdom defines malnutrition as a serious condition that occurs when a person's diet does not contain the right amount of nutrients. It means "poor nutrition" and can be classified into undernutrition and overnutrition. According to UNICEF, undernutrition refers to an outcome of insufficient food intake and repeated infected diseases. It also including being underweight for one's age, too short for one's age (stunted), dangerously thin for one's age (waste) and deficient in vitamins and minerals (micronutrient malnutrition). Overnutrition results from excessive intake of calories.

In 2010, the European Society of Parenteral and Enteral Nutrition (ESPEN) clarified the definition of malnutrition to highlight the differences between cachexia,

sarcopenia and malnutrition (Barker, Gout & Crower, 2011). They stated that malnutrition seen in hospitalized patients often is the combination of cachexia which is “multifactorial syndrome characterized by severe body weight, fat and muscle loss and increased protein catabolism due to underlying disease(s)” and malnutrition (inadequate consumption of nutrients) instead of malnutrition alone.

Malnutrition in hospitalized patients remains a serious issue to date, with worldwide studies showed that between 30% and 50% of hospitalized patients have certain degrees of malnutrition (Waitzberg, Caiffa & Correia, 2001). Changes in hospital practice are urgently needed in order to properly diagnose and treat undernourished patients (Fessler, 2008). One major cause of malnutrition among hospitalized patients is inadequate dietary intake and several clinical situations that can cause loss of appetite or impairment in food intake, and also examinations and procedures that require fasting and changes in diet composition (Kondrup et al., 2002; Aquino & Philippi, 2011).

Specifically, patients’ inadequate macronutrient intake especially carbohydrates were also reported in few studies (Barker, Gout, & Crowe, 2011), although the consumption of most micronutrients and dietary proteins tend to be adequate (Johns et. al, 2013). In their comparative analysis of food service system, Johns et al. (2013) compared foodservice in hospitals and prisons. In Comparison to hospital patients, prisoners received a diet that is generally adequate in energy, protein and most micronutrients (Edwards, Edwards & Reeve, 2001 and Edwards, Hartwell, Reeve, & Schafheitle, 2007), however diet served to prisoners is for consumption of healthy individuals unlike in hospitals. Hospitals tend to serve healthy dishes and usually control elements such as salt and sugar. Research on prison food found that micronutrients such as vitamin D, zinc, manganese and iodine were slightly

insufficient, while sodium level exceeded the recommendation in the diet for prisoners. Alas, while prisons diet could not be reservedly described as 'healthy', it still provides the prisoners with adequate energy in addition to an appropriate balance of macronutrients as well as a reasonable intake of micronutrients compared to the diet designed for patients in hospitals (Johns et al., 2013).

Before analysing the nutritional intake of patients, it is vital to study their perception and acceptability of hospital food. This is because food intake in hospital depends upon the acceptability of food and the circumstances in which it is consumed (Jessri et al., 2011). It was also shown that patients' feedback helps in understanding how food provision may be managed more effectively to reduce hospital undernutrition (Jessri et al., 2011).

Inadequate nutrition may increase the length of hospitalization by 50%, an average of 6 days and tripled the mortality rates (European Nutrition for Health Alliance, 2008; Johns et al., 2013). Besides, it is also associated with depression of the immune system, impaired wound healing, muscle wasting and an increment in hospital cost (Barker et al., 2011).

2.5.2: Plate wastage

Food served is often uneaten by the patients and this resulted in plate wastage. Higher plate wastage leads to malnutrition-related problems in hospital in addition to financial and environmental costs (Williams & Walton, 2011). Measures of plate waste have been used to provide feedback on food acceptability as well as to monitor food intake (Williams & Walton, 2011).

William & Walton (2011) summarized the literature of extent of plate waste in hospital in-patients population. Based on the studies that they had analysed, they are

several reasons for plate waste. William & Walton stated that low appetite, food quality issues, proportion of food being too large (Hong & Kirk, 1995) and taste loss (McLymont, Cox & Stell, 2003) contributed to the reasons patients consumed less than half of the main entrée. Lack of ability to select food and an inappropriate or limited choice of options are some of the reasons for increases in plate waste (Williams & Walton, 2011). Plate waste indicates food acceptability and consumption. Higher plate waste indicated a poor acceptability and consumption of food among inpatients population. Inadequate intake of food during hospitalization period might worsen patients' health conditions.

2.6 Conclusion on Issues Concerning Food Consumption

In short, malnutrition and plate wastage in hospitals are problems that ought to be tackled and overcome before they immerge as one of the major problems in the management of a hospital. Diet prepared in a hospital should cater the patients' nutritional requirement by optimizing patients' consumption of food during hospitalization period. Malnutrition among hospitalised patients may occur as a long term effect of patients' insufficient dietary intake. This will slows the process of wound healing and prolongs patients' hospital stay, subsequently increases cost for medical care of a hospital. Besides, the patients' health condition and effect of surgery or medication may worsen due to the lack of important macro and micronutrients consumption.

Government hospitals are financially supported by the Ministry of Health, thus the allocated budget for food should be utilized for patients' benefit. By preparing food that are satisfying and highly accepted by the patients, plate wastage problems can be reduced, simultaneously preventing increased in food cost or wasting the budget

provided by the ministry. With the current economic status of our country, it is best if healthcare providers such as hospitals use their allocated budget wisely and utilizing it for patients' treatment and recovery instead of being wasted through discarded plates.

CHAPTER 3

MATERIALS & METHODS

3.1: Design of Study

This was a cross-sectional study in which data was collected at only one point. The process of data collection had been carried out during January until February 2015 after ethical approvals had been obtained from the National Medical Research Register (NMRR), the state health department, Ethical Committee for Human Research of Universiti Sains Malaysia, as well as from the directors of all three hospitals. It was a quantitative study in which a self-administered questionnaire was distributed to the selected patients.

“Quantitative research is, as the term suggests, concerned with the collection and analysis of data in numeric form. It tends to emphasize relatively large scale and representative sets of data, and is often, falsely in our view, presented or perceived as being about the gathering of ‘facts’.” (Blaxter, Hughes and Tight, 1996: 61; Hughes, 2006).

This study included a descriptive approach. According to The National Emergency Medical Services for Children Data Analysis Centre (NEDARC), descriptive study design is one in which your primary goal is to assess a sample at one specific point in time without trying to make inferences or causal statements. Survey questionnaire was handed to the participants of this study. The research was carried out with the aim to find out patients’ satisfaction with hospital food provision during their hospital stay by analyzing the correlation of the studied factors (food quality, meal service quality, staff/service and physical environment) with their overall satisfaction