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Food Taboos and Cultural Beliefs in Childhood Cancer Care: Evidence from a Predominantly Malay Sample in Malaysia

(Pantang Larang Makanan dan Kepercayaan Budaya dalam Penjagaan Kanser Kanak-kanak: Bukti daripada Sampel yang Majoritinya Melayu di Malaysia)

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ABSTRACT

Food beliefs and taboos may influence how caregivers select and restrict foods for children undergoing cancer treatment. This study examined dietary perceptions and food taboos among parents or guardians of children with cancer in a teaching hospital in Malaysia. A cross-sectional study was conducted among 51 parents or guardians recruited through convenience sampling from a paediatric cancer support group. Data were collected using an online structured questionnaire adapted from a previous study and analysed descriptively. Most respondents were Malay (98.0%), and 78.4% reported making drastic dietary changes after their child's cancer diagnosis. Food taboos related to avoiding certain foods during therapy were common, with 94.1% reporting these beliefs and 90.2% reporting the corresponding practices. Beliefs that certain foods could cause or worsen cancer, as well as beliefs in foods that could cure cancer, were also reported. Dates and soursop were among the foods consumed because of their perceived cancer-curing properties. These findings highlight the importance of understanding food beliefs within their cultural context, including possible religious influences on food choices. However, the small, predominantly Malay convenience sample from a single hospital limits the generalisability of the findings.

Keywords: food taboos; cultural beliefs; childhood cancer; caregivers; Malaysia

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ABSTRAK

Kepercayaan dan pantang larang makanan boleh mempengaruhi pemilihan serta sekatan makanan oleh penjaga bagi kanak-kanak yang menjalani rawatan kanser. Kajian ini meneliti persepsi pemakanan dan pantang larang makanan dalam kalangan ibu bapa atau penjaga kanak-kanak dengan kanser di sebuah hospital pengajar di Malaysia. Kajian keratan rentas ini melibatkan 51 ibu bapa atau penjaga yang direkrut melalui persampelan mudah daripada kumpulan sokongan kanser pediatrik. Data dikumpulkan menggunakan soal selidik berstruktur dalam talian yang diubah suai daripada kajian terdahulu dan dianalisis secara deskriptif. Majoriti responden ialah Melayu (98.0%), dan 78.4% melaporkan perubahan pemakanan yang drastik selepas diagnosis kanser anak. Pantang larang untuk mengelakkan makanan tertentu semasa rawatan adalah lazim, dengan 94.1% melaporkan kepercayaan tersebut dan 90.2% melaporkan amalannya. Kepercayaan bahawa makanan tertentu boleh menyebabkan atau memburukkan kanser, serta kepercayaan bahawa makanan tertentu boleh menyembuhkan kanser, turut dilaporkan. Kurma dan durian belanda antara makanan yang dimakan kerana dipercayai mempunyai khasiat untuk menyembuhkan kanser. Dapatan ini menunjukkan kepentingan memahami kepercayaan makanan dalam konteks budaya, termasuk kemungkinan pengaruh agama terhadap pemilihan makanan. Walau bagaimanapun, sampel kecil yang majoritinya Melayu, dipilih secara persampelan mudah dari sebuah hospital sahaja, mengehadkan kebolehgunaan dapatan kepada populasi yang lebih luas.

Kata kunci: pantang larang makanan; kepercayaan budaya; kanser kanak-kanak; penjaga; Malaysia

INTRODUCTION

Childhood cancer remains an important public health concern, and its diagnosis can bring substantial changes to family life and everyday caregiving. In Malaysia, the Summary of the Malaysia National Cancer Registry Report 2017–2021, published by the National Cancer Institute, Ministry of Health Malaysia, in 2024, provides national cancer incidence data, including childhood cancer (National Cancer Institute 2024). Beyond medical treatment, families must make daily decisions about food, feeding and care while supporting children through treatment. These decisions may be shaped not only by clinical advice but also by caregivers' prior experiences, cultural values and beliefs about which foods may help or harm a child.

Children undergoing cancer treatment may experience symptoms such as appetite loss, nausea, vomiting and changes in taste or smell, which can complicate dietary intake. Caregivers therefore play an important role in selecting, preparing and encouraging food. Their decisions may be influenced by concerns about food safety, beliefs about foods that cause or worsen cancer, and expectations about foods that may promote recovery. Although these beliefs can reflect caregivers' efforts to protect their children, unsupported restrictions may also make feeding more challenging. Such concerns should be discussed respectfully and in ways that distinguish cultural beliefs from evidence-based nutrition and food-safety advice.

Food beliefs and taboos are particularly relevant to culturally responsive care because food is more than a source of nutrients: it can carry family, social, religious and cultural meanings. In a Malaysian qualitative study, Chong et al. (2022) found that caregivers of children with acute lymphoblastic leukaemia described beliefs about dietary intake, food choices, natural or home remedies, and the sources from which they obtained information. The study highlighted that caregivers' beliefs are varied and shaped within Malaysia's

multicultural context. International research has also described caregivers' concerns and food-related decisions during paediatric cancer treatment, including avoidance of foods perceived as risky (Gomez et al. 2024). Understanding such beliefs is important for health professionals who support families in making informed decisions without dismissing their cultural context.

Despite growing recognition that caregivers' beliefs can influence food-related decisions during childhood cancer care, locally grounded evidence on specific food taboos and their reported practices remains useful. This study therefore examined dietary perceptions and food taboos among parents or guardians of children with cancer attending an urban teaching hospital in Malaysia. Because the sample was predominantly Malay, the findings are discussed with attention to the cultural context represented by the participants, without assuming that the findings reflect all Malay families or establish ethnicity as the cause of particular beliefs.

Food taboos are practices of avoiding particular foods for perceived health, moral, social, religious or cultural reasons. In the context of childhood cancer, these beliefs may intersect with biomedical advice, family experience, information shared by relatives and online sources, and caregivers' desire to protect the child. Such beliefs should be understood within their social context rather than dismissed as ignorance. At the same time, beliefs that lead to unnecessary restriction or reliance on foods believed to cure cancer may affect dietary adequacy or delay evidence-based care.

Previous studies have documented dietary beliefs among families caring for children with cancer, including restrictions during treatment and the use of particular foods believed to promote recovery (Martinson & Yee, 2003; Totadri et al., 2017). Cultural context matters because caregivers interpret information through familiar food practices and meanings. The present study contributes a Malaysian, predominantly Malay sample and describes both beliefs and reported practices across several categories of food taboo.

METHODOLOGY

A cross-sectional study was conducted among parents or guardians (>18 years old) of pediatric oncology patients aged 2 to 18 years old at Universiti Kebangsaan Malaysia teaching hospital, Hospital Canselor Tuanku Muhriz. Ethical approval was obtained from the Research Ethics Committee, Universiti Kebangsaan Malaysia (UKMPPI/111/8/JEP-2020-159). Information sheets of the study were distributed and the approved consent forms were obtained from all the subjects prior to this study.

The participants in this study were selected using convenience sampling from the members of the hospital's paediatric cancer support group. 51 subjects consisting of parents or guardians consented and participated in this study. The inclusion criteria for parents or guardians were aged 18 years old and above, involved in the care of patients and able to communicate in Bahasa Malaysia. The inclusion criteria for oncology pediatric patients were aged 2 to 18 years old and still undergoing treatment or follow-up treatment. Exclusion criteria for parents and guardians included those who have mental problems. Exclusion criteria for oncology pediatric patients were recovered or passed away.

A structured questionnaire was distributed online to the subjects following obtaining approved consent. The questionnaire consisted of five sections which were socio-demographic information of the respondents, clinical information and diet perception and food taboo.

The questionnaire used in this study was modified from Totadri et al. (2017) (Totadri et al., 2017) to suit the local context. It consists of five criterias which were (1) beliefs and practices of taboos on the intake of foods that can cause cancer, (2) taboos on the avoidance of certain foods during therapy, (3) taboos on the intake of foods that can worsen cancer, (4) intake of foods that can cure cancer and (5) intake of organic foods that can cure and prevent cancer. An assessment of both face and content validity was conducted prior to data collection.

10 respondents consisting of parents/guardians from another hospital's paediatric support group were involved in the face validation and 100% approval was obtained from the assessors. For content validity, 5 service dietitians with more than 5 years of clinical experience were involved. Four-point likert scale was used in content validity based on relevant, clarity, ambiguity and comprehension of the items. The result showed an excellent content validity index (CVI) of 0.96 indicating a high level of agreement from the panel of experts (Yusoff 2019).

Descriptive analysis was used to determine the socio-demography, clinical profile, percentage of diet perception and food taboo.

RESULTS

A total of 51 parents/guardians of pediatric oncology participated in this study. The socio-demographic profile of parents or guardians is shown in Table 1. The mean age for parents/guardians was 38.8 with more females (86.3%) compared to males (13.7%) were involved in this study. Most of the subjects were mothers (84.3%) and mostly of the Malay race (98%). For educational level, more than half of the parents/guardians had tertiary level (60.8%). More than half of them were working (62.7%) with the highest involvement coming from parents or guardians who have low monthly income (54.9%). 78.4% of the parents/guardians reported practicing drastic dietary changes on their children following cancer diagnosis

The socio-demographic profile of the pediatric oncology patients is shown in Table 2. The mean age for the patients was 8.4 with more boys (60.8%) compared to girls (39.2%) were involved in this study. For the type of cancer, more than half of the patients were diagnosed with leukemia (70.6%) and majority of the parents/guardians (66.7%) were uncertain about the stage of cancer. 21.5% of the patients were reported by their parents/guardians to be in the advanced stage of cancer (stage 3-4) and 11.8% were in the early stage of cancer (stage 1-2). For the type of cancer treatment, most of the patients undergo chemotherapy (78.4%) while others undergo combined therapy (21.6%).

According to Table 3, high percentage of parents or guardians identified belief and practice the taboos on the intake of foods that can cause cancer with 80.4% and 88.2% respectively. Among all the criteria, taboos on the avoidance of certain foods during therapy have the highest percentage of parents or guardians who belief (94.1%) and practice (90.2%). 84.3% of parents or guardians' belief taboos on the intake of foods that can worsen cancer while there were more practicing it which 92.2%. Parents or guardians' belief (66.7%) and practice (62.7%) intake of foods that can cure cancer. 64.7% of parents or guardians believe of organic foods that can cure and prevent cancer. There are more parents not practicing intake of organic foods that can cure or prevent cancer 52.9% while only 47.1% are practicing it.

As shown in Table 4, the most commonly practiced taboos of food that can cause cancer were food that contains monosodium glutamate (MSG) 62.7% and processed meat (58.8%),

followed by grilled and smoked meat (23.5%), cultured food and drink (23.5%) both and carbonated drink (5.9%). Three foods reported by parents/guardians that were commonly avoided during therapy include honey (33.3%), cultured food and drink (27.4%) and raw or half-cooked food (19.6%), followed by processed food (15.7%) and egg (7.8%). Almost half of the parents/guardians (47.1%) reported to have avoided sugar in their children's diet due to their belief that it can worsen the cancer ahead of red meat (37.3%) and fruits and vegetables sprayed with pesticide (35.3%). Foods that were reported to be included in the patients' diet to cure cancer were dates (39.2%), soursop (37.3 %) followed by intake of bananas (13.7%), pomegranate and Habbatus Sauda both at 7.8%.

TABLE 1. Socio-demographic profile and dietary practices of parents or guardians

Parameter	Total (n=51)
Socio-demography Age (year) Mean ± standard deviation	38.8 ± 6.8
Sex Male Female	 7 (13.7%) 44 (86.3%)
Relationship with patients Mother Father Guardian	 43 (84.3%) 7 (13.7%) 1 (2.0%)
Race Malay Others	 50 (98.0%) 1 (2.0%)
Educational level Secondary level Tertiary level	 20 (39.2%) 31 (60.8%)
Occupational status Working Not working	 32 (62.7%) 19 (37.3%)
Monthly income Low income (< RM3000) Moderate income (RM3000 - RM4999) High income (≥ RM5000)	 28 (54.9%) 8 (15.7%) 15 (29.4%)
Dietary practice Practicing drastic dietary changes among children or children under care following cancer diagnosis Yes No	 40 (78.4%) 11 (21.6%)

TABLE 2. Socio-demographic, clinical and nutritional profile of paediatric oncology patients

Parameter	Total (n=51)
Socio-demography	
Age (year) Mean ± standard deviation	8.4 ± 4.1
Sex Male Female	 31 (60.8%) 20 (39.2%)
Clinical information	

Parameter	Total (n=51)
Type of cancer Leukemia Others	 36 (70.6%) 15 (29.4%)
Stage of cancer Early stage (Stage 1-2) Advanced stage (Stage 3-4) Uncertain	 6 (11.8%) 11 (21.5%) 34 (66.7%)
Year of cancer diagnosis Mean ± standard deviation	2.8 ± 1.9
Type of treatment Chemotherapy Combined therapy	 40 (78.4%) 11 (21.6%)

TABLE 3. Dietary perceptions and food taboos among parents or guardians

Criteria		Total (n=51)
Taboos on the intake of foods that can cause cancer		
Belief	Yes	41 (80.4%)
	No	10 (19.6%)
Practice	Yes	45 (88.2%)
	No	6 (11.8%)
Taboos on the avoidance of certain foods during therapy		
Belief	Yes	48 (94.1%)
	No	3 (5.9%)
Practice	Yes	46 (90.2%)
	No	5 (9.8%)
Taboos on the intake of foods that can worsen cancer		
Belief	Yes	43 (84.3%)
	No	8 (15.7%)
Practice	Yes	47 (92.2%)
	No	4 (7.8%)
Intake of foods that can cure cancer		
Belief	Yes	34 (66.7%)
	No	17 (33.3%)
Practice	Yes	32 (62.7%)
	No	19 (37.3%)
Intake of organic foods that can cure and prevent cancer		
Belief	Yes	33 (64.7%)
	No	18 (35.3%)
Practice	Yes	24 (47.1%)
	No	27 (52.9%)

TABLE 4. Types of foods reported in food taboos and perceived cancer-related effects

Type of food	Total
Taboos on the intake of foods that can cause cancer	

Type of food	Total
Food that contain MSG	32 (62.7%)
Processed meat	30 (58.8%)
Grilled and smoked meat	12 (23.5%)
Cultured food and drink	12 (23.5%)
Carbonated drink	3 (5.9%)
Taboos on the avoidance of certain foods during therapy	
Honey	17 (33.3%)
Cultured food and drink	14 (27.4%)
Raw/ half cooked food	10 (19.6%)
Processed food	8 (15.7%)
Egg	4 (7.8%)
Taboos on the intake of foods that can worsen cancer	
Sugar	24 (47.1%)
Red Meat	19 (37.3%)
Fruit and vegetable sprayed with pesticide	18 (35.3%)
Intake of foods that can cure cancer	
Dates	20 (39.2%)
Soursop	19 (37.3%)
Banana	7 (13.7%)
Pomegranate	4 (7.8%)
Habbatus Sauda	4 (7.8%)

DISCUSSION

There are limited studies on dietary perceptions, beliefs and practices among parents or guardians of children with cancer. In this study, most respondents were Malay (98.0%), and 78.4% reported making drastic changes to their children's diets after cancer diagnosis. This was higher than the 37% reported in a study in India, where mothers changed their children's diets during cancer treatment (Totadri et al. 2017). A study in Australia also found that parents of children who had survived cancer used different ways to encourage their children to eat (Cohen et al. 2015). These findings show that changes in dietary practices are common concerns among caregivers of children with cancer, although the practices may differ between countries and cultural backgrounds.

This study identifies 80.4% of subjects belief while 88.2% practiced taboos on the intake of foods that can cause cancer. Food that contains monosodium glutamate (MSG) and processed meat were specific foods that were thought of by some parents and guardians that can cause cancer. According to Khatab and Elhaddad (2015), the study on cell culture emphasized that high MSG intake can affect cell division and growth, chromosome behavior and can lead to mutations and cancer. However, MSG has been "generally recognised as safe" by the Food and Drug Administration (FDA). There is no convincing evidence that food additives such as MSG that usually present in very small quantities in food can cause human cancers (Kushi et al. 2006). Nitrates are used to preserve the processed meat from bacteria and give pink appearance coloration to the meat. However, there is some data suggesting that nitrates can be harmful because they can damage the cell and cause cancer.

This study consists of the majority of children that have been diagnosed with leukemia. A study in China among children found that the consumption of processed meat is associated with an increased risk of acute leukemia (Liu et al. 2009). Contrast study in California in determining particular food associated with childhood cancer found that no association was apparent for the consumption of processed meat and cured meat with the risk of leukemia and brain cancer (Kwan et al., 2004).

Almost all subjects (94.1%) beliefs and practice (90.2%) the taboos on the avoidance of certain foods during therapy. Compared to study by Totadri, Radhakrishnan (Totadri et al., 2017) found that only about half of mothers 57% belief that certain foods should be avoided during treatment. One qualitative study by Cohen, Wakefield (Jennifer Cohen et al., 2015) found that none of the parents restricted their child's food intake or type of foods eating during treatment. Parents or guardians will do their best to restore and maintain the health status of children when they undergo cancer treatment. They also will try to avoid the thing that is against their beliefs which can result in poor outcomes of the treatment. Among the foods avoided are honey, cultured foods or drinks, and raw or half-cooked foods. Honey is one of the sources of botulism that is possible to cause fatal illness. Botulism is at a higher risk for infants and children under 12 months because the bacteria can cause serious food poisoning. They assumed that cancer patients also should avoid honey to prevent foodborne botulism. In contrast, some studies show that honey has the potential to be anticancer agents, anti-inflammatory, antimicrobial, and antioxidant properties (Ahmed & Othman 2013; Othman 2012). The immune system protects the body from outside invaders such as bacteria, viruses, fungi, and toxins. Chemotherapy is most likely to suppress the immune system and destroy some of the white blood cells however other treatments like surgery and radiotherapy can affect the immune system.

Children under cancer treatment are susceptible to infection as they have a weak immune system. Cultured food/drink was like their food myth as they had been advised by their hematologist to avoid it. Cultured food or drink usually contain probiotics. According to a clinical study, probiotic and synbiotic seem to be safe in children between 0 and 18 years (van den Nieuwboer et al. 2015). Based on ESPEN guidelines the safety of using probiotics needs to be reliably addressed before recommended to immune-compromised patients (Arends et al. 2017).

Most subjects (84.3%) believed and practiced (92.2%) taboos on the intake of foods that can worsen cancer. Certain foods that have been avoided are sugars, red meat, and fruits & vegetables sprayed with pesticides. In terms of sugar can worsen cancer, study in cell culture to measure the effects of glucose in the blood of a leukemic patient found that sugar speeds up cancer growth and enhances the cancer growth production factor (Hafeez Ullah et al. 2018). Instead, in prospective cohort study among men and women in eight states in the United States found that no association between dietary sugars and risk of colorectal or any other major cancer (Tasevska et al. 2012).

More than half of the respondents believed (66.7%) and practised (62.7%) the consumption of foods perceived to cure cancer. Dates (39.2%) and soursop (37.3%) were the most frequently reported foods in this category. The prominence of dates may be considered within the cultural and religious context of the predominantly Malay sample, as dates are associated with Islamic dietary traditions and are commonly recognised as a prophetic food among Muslim communities. Research on date consumption in Malaysia suggests that religious and health-related considerations may both influence the consumption of dates (Umar et al. 2016). Such cultural and religious associations may contribute to the perception of dates as beneficial foods during illness, although the present study did not directly

investigate the reasons underlying respondents' choices. Scientific literature has reported antioxidant and antimutagenic properties of date fruit extracts in experimental studies (Vayalil 2002), while reviews of clinical studies have highlighted the need for stronger evidence to establish many proposed therapeutic effects of dates (Elmi et al. 2020). Therefore, the reported use of dates should be understood as a food belief and caregiving practice rather than evidence that dates can cure childhood cancer. Soursop had potential to be a cancer treatment agent according to clinical study that had been carried out (Pieme et al. 2014). A study that involved animal trials stated that soursop contains anti-ovarian cancer properties (Ukwubile 2012). Based on these studies, dates and soursop had been proven to contain anticancer elements which have significant potential in cancer treatment but there is no clinical study that proves dates and soursop can cure cancer especially leukemia.

Most of the subjects had belief (64.7%) on intake of organic foods that can cure and prevent cancer, but they did not practice it (52.9%). Organic food is the product of a farming system which avoids the use of man-made fertilisers, pesticides; growth regulators and livestock feed additives. Irradiation and the use of genetically modified organisms (GMOs) or products produced from or by GMOs are generally prohibited by organic legislation. The reason behind the subject believe on organic food can cure cancer but they did not practice it may be due to its high prices (Aschemann‐Witzel & Zielke 2017). According to a review that had been done, organic foods contain higher vitamin, higher mineral, higher antioxidant activity and lower risk for contamination compared to conventional foods (Brantsæter et al. 2017). A web-based study that was carried out in French resulted in higher frequency of organic foods consumption related to reduced risk of cancer (Baudry et al., 2018). Even though consumption of organic foods can lower the risk of cancer, there was no evidence that it can cure cancer. There is no scientific evidence that supports benefits of organic foods in the care of cancer patients (Magnusson et al. 2003).

ETHNIC STUDIES IMPLICATION

The findings provide insight into food beliefs among caregivers in a predominantly Malay sample in Malaysia. Dates and soursop were the most commonly reported foods believed to cure cancer, while some foods such as sugar, honey and cultured foods were avoided. These food choices may be influenced by cultural and religious beliefs. For example, dates are commonly associated with Islamic dietary practices and are recognised as a prophetic food among Muslims. This may be one of the factors related to the belief in the health benefits of dates. However, this study did not explore whether the respondents chose dates because of religious beliefs. The findings also cannot be generalised to all Malay families, as food beliefs may vary between individuals and families. From an ethnic studies perspective, these findings show how food beliefs may be understood within the cultural and religious context of family caregiving. Understanding these beliefs can help healthcare professionals communicate with caregivers in a way that respects their cultural and religious practices while providing accurate information about foods and cancer treatment.

CONCLUSION

Food taboos and beliefs about foods that may cause, worsen or cure cancer were commonly reported among parents and guardians in this predominantly Malay sample. Most respondents reported changing their child's diet after cancer diagnosis, and beliefs about avoiding certain foods during treatment were particularly common. Dates and soursop were among the foods reported to be consumed because of their perceived cancer-curing properties. These findings highlight the importance of understanding caregivers' food beliefs and the possible influence of cultural and religious practices on food choices during childhood cancer care. However,

the study involved a small convenience sample from a single hospital and relied on self-reported information. Therefore, the findings should not be generalised to all Malay caregivers or families of children with cancer.

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