REVIEW PAPER

NURSING PROBLEMS 2024; 32 (1): 15-20

Examination of nursing theses on oral mucositis in children with cancer in Turkey

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Authors' contribution:

A. Study design/planning • B. Data collection/entry • C. Data analysis/statistics • D. Data interpretation • E. Preparation of manuscript • F. Literature analysis/search • G. Funds collection

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SUBMITTED: 03.10.2023
ACCEPTED: 27.12.2023
DOI: https://doi.org/10.5114/ppiel.2024.139128

ABSTRACT

Oral mucositis is common in children with cancer. Nurses are effective in the management of oral mucositis. For this reason, the study was conducted to examine nursing theses regarding oral mucositis in children with cancer in Turkey. Theses were obtained by scanning the Higher Education Institution National Thesis Centre database. Full text doctoral and master's theses are included. The screening was done with Turkish keywords such as "mucositis", "oral mucositis", and "oral care". Ten theses were included in the study.

The majority of the theses in the research (80%) were prepared at the master's level. 60% of the nursing theses related to oral mucositis were made within the Department of Child Health and Diseases Nursing. It was observed that most of the theses (40%) were conducted quasi-experimentally. Nursing theses on oral mucositis in children with cancer were found to be insufficient.

Key words: oral mucositis, child with cancer, nursing care, systematic review.

INTRODUCTION

Childhood cancer is relatively rare compared to cancer in adults. It ranks as the second most common cause of death among children aged 1-14 years in the United States of America (USA) and among children aged 5 years and older in Turkey [1, 2]. Among the various types of childhood cancer, leukaemia and lymphoma are the most prevalent in children aged 0-14 years [3].

The treatment of paediatric cancer involves a range of modalities, including surgery, radiotherapy, chemotherapy, biotherapy, and stem cell transplantation, tailored to the specific type and stage of the disease [4]. Nevertheless, one of the most common side effects of chemotherapy and radiotherapy is oral mucositis [5]. Patients experiencing mucositis often encounter difficulties in chewing, swallowing, and speaking. Additional issues such as mouth inflammation, swelling, and lesions may arise. Pain associated with mucositis ranks among the most frequently reported complaints by patients [6, 7].

Paediatric cancer patients are more prone to mucositis compared to adult cancer patients due to the rapid cell division characteristic of childhood [8, 9]. Therefore, effective mucositis management is crucial in the care of paediatric cancer patients. There are a variety of methods for both preventing and treating oral mucositis [10]. These methods encompass fundamental oral care practices (such as teeth cleaning, use of mouth rinses, and dental check-ups before and during cancer treatment), cryotherapy, antiseptic agents, antibiotics, vitamins, and herbal remedies [11, 12].

Nurses play a crucial role in patient care, and their knowledge about oral mucositis is essential. Therefore, the examination of nursing theses on this subject holds significant importance in advancing knowledge within the field and enhancing nursing practices. This systematic review was conducted to scrutinise postgraduate nursing theses focusing on oral mucositis in paediatric cancer patients in Turkey. The study aims to analyse the findings and furnish valuable insights to researchers in this area.

Research questions

1. What is the rate of nursing postgraduate theses on oral mucositis in children with cancer in Turkey?
2. What is the design type of nursing theses about oral mucositis in children with cancer?
3. What are the methods used in nursing theses for the management of oral mucositis in children with cancer?

MATERIAL AND METHODS

Study design

This study was conducted as a systematic review.

Participants and data collection

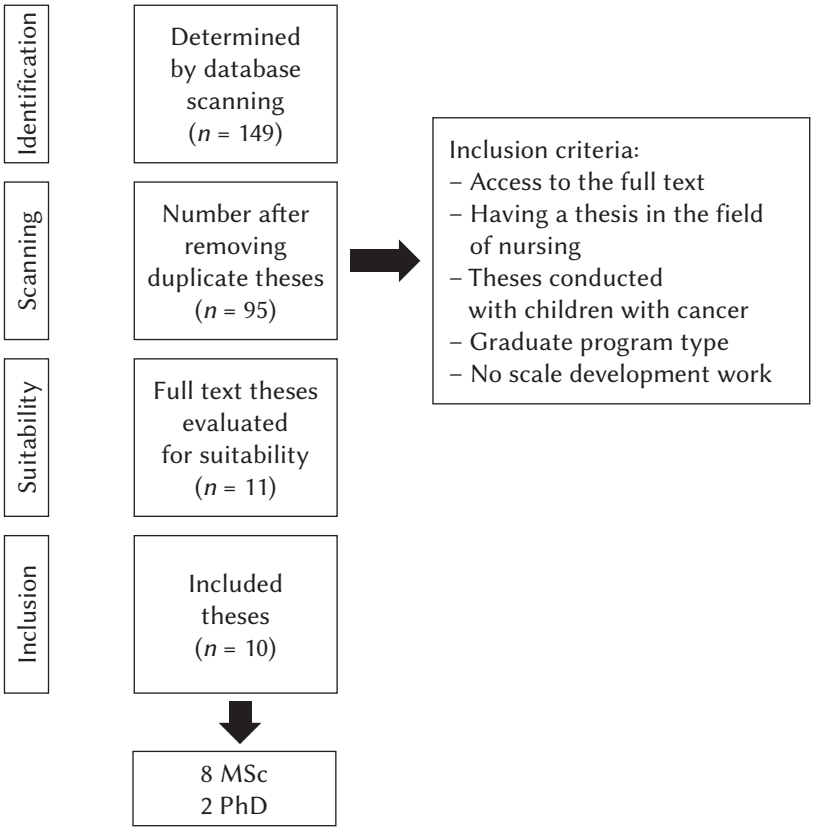
This study encompassed all postgraduate theses related to oral mucositis found within the Turkey Council of Higher Education (CHE) National Thesis Centre Database. The research sample consisted of accessible nursing theses concerning oral mucositis in paediatric cancer patients. The screening process was conducted from 3 to 9 April 2023. Theses that met the inclusion criteria were identified using keywords such as "oral mucositis", "mucositis", and "oral care". Only theses authored by the Nursing and/or Paediatric Nursing departments with accessible full-text versions were considered for the study. As a result of this search, 95 theses were identified. Among these, 85 theses were excluded because they were not related to nursing or the research topic. Consequently, 10 theses that met the research criteria were included in the study.

A standardised data summary form was developed by the researcher to facilitate data collection and evaluation. The content of this form included information such as the type, year, subject, field, research methodology, and results of the postgraduate theses included in the study. The theses were examined in chronological order and categorised as master's or doctoral theses.

For this research, the theses were accessed online from the National Thesis Centre database, utilising the Turkish keywords "oral mucositis", "mucositis", and "oral care". The screening process concluded on 9 April 2023. Answers to the research questions were sought within the reviewed theses. Inclusion criteria for the study included accessibility to the full text, relevance to the field of nursing, relevance to children with cancer, and classification as either master's or doctoral theses. Theses written in departments other than nursing and those focusing solely on scale development were excluded from the study. The selected master's and doctoral theses that met the inclusion criteria were then chosen. The research methodology adhered to the PRISMA checklist (Fig. 1).

Statistics

Data were collected based on 4 primary screening criteria, including theses included in the research, access to full texts, research field, research design, and graduate type. During the study's analysis, researchers made comparisons after thoroughly reviewing the theses. Following the acquisition of data, it was



MSc – Masters of Sciences, PhD – doctor's degree

Figure 1. Prisma flow chart

Table 1. Descriptive characteristics of the nursing theses examined

Introductory features	*n*	%
Thesis type		
MSc	8	80
PhD	2	20
Department		
Nursing Department	4	40
Child Health and Diseases Nursing Department	6	60
Research design type		
Experimental	3	30
Semi-Experimental	4	40
Descriptive	2	20
Descriptive and quasi-experimental	1	10
Sample		
Children with cancer in the 0-18 age group	7	70
Family of child with cancer	1	10
Caring nurse	1	10
Caring family and nurse	1	10

transferred to a computerised environment and assessed using descriptive statistical methods such as percentages. Ethics Committee approval was verified for all studies included in the research.

Ethical aspects

Because all the postgraduate theses reviewed in this study are readily available through the National Thesis Centre, there was no requirement for Ethics Committee approval.

RESULTS

The descriptive characteristics of the 10 theses analysed in the research are summarised in Table 1. It was noted that the theses under investigation consisted of 8 master's theses and 2 doctoral theses, all centred around the topic of oral mucositis in children with cancer. A significant portion, comprising 40%, employed the quasi-experimental research design. Moreover, 60% of the theses in question were carried out within the Department of Child Health and Diseases Nursing. In terms of the study population, it was evident that most of the theses (70%) concentrated on children with cancer within the age range of 0-18 years.

The first nursing thesis focusing on oral mucositis in children with cancer was identified in 2011, as depicted in Figure 2. Additionally, a significant uptick in research endeavours related to this topic is evident in the year 2019. The visual depiction of nursing graduate theses pertaining to oral mucositis in paediatric cancer patients, organised by year, sheds light on the evolving research trends within this field over time.

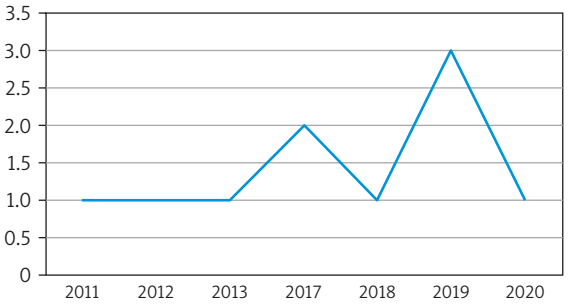


Figure 2. Distribution of nursing postgraduate theses on oral mucositis in children with cancer by years (2011-2020)

The characteristics of the theses examined within the framework of the study are given in detail in Table 2 [13-22]. It is noteworthy that these theses are predominantly of a quasi-experimental design. Additionally, there are theses that delve into the impact of oral mucositis on the quality of life among children with cancer, as well as the influence of educational interventions on the development of oral mucositis. Furthermore, research investigations have been carried out to explore the potential use of black mulberry and honey in the treatment of oral mucositis.

DISCUSSION

Research on oral mucositis in children with cancer has revealed that most studies (80%) are conducted at the master's thesis level in Turkey. A similar trend is observed when analysing findings from other studies in the literature, where master's theses outnumber doctoral theses [23]. This observation suggests that the subject of oral mucositis in children with cancer predominantly attracts graduate students, and research in this field is typically conducted as part of their postgraduate education. Conversely, there are reports indicating a higher rate of doctoral theses. These discrepancies are probably linked to the specific content and research inquiries of each study. For instance, it is conceivable that students aiming for a deeper understanding of the effects of oral mucositis in children with cancer and a greater contribution to the field might opt for doctoral-level research. The distribution of such studies underscores the significance of oral mucositis within the realm of nursing and showcases the diverse contributions of students at varying academic levels. The production of nursing theses with the goal of enhancing the quality of life for children with cancer and advancing the management of oral mucositis holds promise for expanding knowledge in this field and enhancing practical applications. The diversity in the distribution of nursing theses on oral mucositis in children with cancer may reflect a multi-tiered approach to nursing education, enabling an in-depth exploration of this crucial subject. The abundance and variety of these studies can

Table 2. Characteristics of the postgraduate theses included in the research

Thesis type, Year, Writer	Name of the thesis	Department	Design type	Conclusion
MSc (Hacıoğlu, 2020) [13]	Oral Mucositis on the Quality of Life in Children Receiving Chemotherapy Treatment	Department of Child Health and Diseases Nursing	Descriptive (7-12 age group) (*n* = 58)	Mucositis increases in children, pain scores increase and quality of life decreases
MSc (Alemdar, 2019) [14]	Examination of the Use of "Oral Care Guide for Children and Adolescents" in the Development of Oral Mucositis in Children with Leukemia	Department of Child Health and Diseases Nursing	Descriptive and quasi-experimental (ages 2-18 and their parents) (*n* = 30)	Using guides in children with leukaemia has enabled early detection and prevention of oral mucositis
MSc (Albayrak, 2019) [15]	Chewing Gum with Black Mulberry Syrup on the Prevention of Oral Mucositis in Children Receiving Chemotherapy	Department of Nursing	Randomized controlled experimental (ages 8-18) (Black mulberry group: 36, Gum group: 10, Control group: 36)	It was observed that mucositis started later or did not occur at all in the black mulberry group, and the pain complaint was less than the gum group
MSc (Bektaş, 2019) [16]	Basic Oral Care Training for the Prevention of Oral Mucositis Planned for Children Receiving Chemotherapy	Department of Child Health and Diseases Nursing	Experimental with self-control group (3-17 age group) (*n* = 30)	It has been observed that planned basic oral care education given to children receiving chemotherapy prevents the formation of oral mucositis and reduces the degree of oral mucositis
MSc (Avcı, 2018) [17]	The Effect of the Evidence-Based Practice Program Prepared for Nurses Caring for Pediatric Patients Undergoing Stem Cell Transplantation on the Oral Mucositis Diagnosis Status of Nurses	Department of Child Health and Diseases Nursing	Quasi-experimental, single group, before-after repeated measures design (*n* = 12)	Training for caring nurses increases and improves the diagnosis of oral mucositis
MSc (Alışarlı, 2017) [18]	The Use of Sodium Bicarbonate and Black Mulberry Lollipop Used in Oral Care in the Prevention of Oral Mucositis in Children Followed with Cancer Diagnosis	Department of Nursing	Randomised controlled experimental (3-18 age group) (Black mulberry group: 35, Control group: 34)	It has been observed that the use of black mulberry lollipop in oral care in children receiving chemotherapy reduces the frequency of oral mucositis
MSc (Yurdakul, 2017) [19]	Complementary Practices for Oral Mucositis of Families of Children with Cancer	Department of Nursing	Descriptive cross-sectional (*n* = 302)	Oral mucositis and ensure its healing
PhD (Bulut, 2013) [20]	Oral Care with Honey on the Prevention and Healing of Mucositis in Children Receiving Chemotherapy	Department of Child Health and Diseases Nursing	Semi-experimental (Control group: 39, Experimental group: 37)	It was revealed that the use of honey heals oral mucositis in children and prevents the formation of oral mucositis
PhD (Yavuz, 2012) [21]	Examining the Effect of Planned Oral Care Education on the Degree of Oral Mucositis in Pediatric Oncology Patients	Department of Child Health and Diseases Nursing	Quasi-experimental and cross-sectional (8-18 age group) (*n* = 16)	Pre-treatment oral care education in paediatric patients affects the degree of oral mucositis
MSc (Özdemir, 2011) [22]	The Effect of Education to the Patient's Family and the Nursing Nurse on the Control of Oral Mucositis in Children with Leukemia Receiving Chemotherapy	Department of Nursing	Semi-experimental (number of nurses: 34, number of mothers: 40)	After the training, nurses' and mothers' oral evaluation, oral care, and oral protective feeding behaviours in children increased

serve as a valuable resource for elevating the care and quality of life for children with cancer.

A predominant trend in the examined theses was the utilisation of a quasi-experimental design. This aligns with the findings from the study conducted by Şahin *et al*. (2020), which similarly noted a prevalent use of quasi-experimental designs [24]. Interestingly, in contrast to this pattern, the studies conducted by Yumru and Koç (2019) and Akalın and Şahin (2022) revealed a greater inclination towards experimental

designs [25, 26]. This discrepancy is believed to be due to variations in the composition of the sample groups under investigation.

When theses were examined, it was determined that oral mucositis reduces the quality of life in children. In the research of Cheng *et al.* (2012) and the study of Sargın Yıldırım (2011), it was observed that oral mucositis negatively affects the quality of life in children [27, 28].

Theses demonstrating the effectiveness of oral mucositis prevention education for children with cancer appear to align with similar research findings in the literature. Multiple studies indicate that training nurses in oral care for paediatric cancer patients can significantly reduce the incidence of oral mucositis. Such training not only enhances nurses' knowledge and skills but also contributes to an improved quality of life for children with cancer. For instance, a study conducted by Cheng *et al.* (2001) revealed that the group that did not receive training and did not follow a regular oral care protocol experienced a higher degree of oral mucositis [29]. Similarly, in the study by Pinto *et al.* (2006), the trained group exhibited a lower incidence of oral mucositis [30]. These findings underscore the critical role of oral care training for nurses caring for children with cancer. It is worth noting that there is a reported deficiency in awareness about oral care among nurses working in paediatric oncology, highlighting the need for increased emphasis on nurse training in this regard. The collective body of research and literature underscores the significance and positive impact of oral care education for children with cancer. Strengthening nurses' training and awareness on this issue can play a vital role in the care of paediatric cancer patients and mitigate the risk of oral mucositis.

Theses investigating the use of honey in managing oral mucositis in children have demonstrated its effectiveness. Both the research conducted by Singh *et al.* (2019) and Elsass's (2017) study found honey to be an effective remedy against oral mucositis in children with cancer [31, 32]. This positive effect has also been supported by systematic reviews, such as those by Zhang *et al.* (2022) and Friend *et al.* (2018) [33, 34]. These reviews have affirmed that honey can reduce and prevent oral mucositis in children with cancer. The findings of these theses align with the existing literature, thus reinforcing the effectiveness of honey as a management approach for oral mucositis. On the other hand, the theses do not indicate that chewing gum is more effective than other methods in managing oral mucositis. In a systematic review by Semerci and Kocaaslan (2022), chewing gum was not found to be effective in reducing oral mucositis [35].

It is crucial to emphasise that the majority of research on the management of oral mucositis in children stems from thesis studies conducted by Turkish researchers, and only a limited portion of these studies has been published. This underscores the importance of transitioning these valuable thesis studies into published works. Doing so not only contributes significantly to the expansion of scientific knowledge in the field but also ensures that the study findings reach a wider global audience. By publishing these studies, we can facilitate the sharing of insights and potential solutions related to oral mucositis in children with cancer, ultimately helping both the scientific community and the children who may benefit from improved care and management strategies.

Limitations

Theses accessible in the National Theses Database were used in the research. In addition, one of the limitations of the research is that only theses written in the field of nursing were evaluated.

CONCLUSIONS

In conclusion, thesis studies on the management of oral mucositis in children with cancer show that some natural products (black mulberry, gum, honey, etc.) may be effective. However, there is a need to develop a standardised method for the use of these products. In future studies, nurse researchers are expected to obtain more effective results by creating standard protocols for oral mucositis management. Additionally, these studies emphasise the importance of providing training and awareness-raising activities to nurses involved in the care of children with cancer about oral mucositis management. Increasing the knowledge and skills of nurses in this field can help improve the quality of life of children with cancer.

The results also show that the number of theses on oral mucositis in children with cancer has increased but is still insufficient. It is important to conduct more experimental studies in the future and increase knowledge in this field. Such research may contribute to the development of more effective methods in the care of children with cancer.

Disclosures

The authors declare no conflict of interest.
This research received no external funding.
Institutional review board statement: Not applicable.

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