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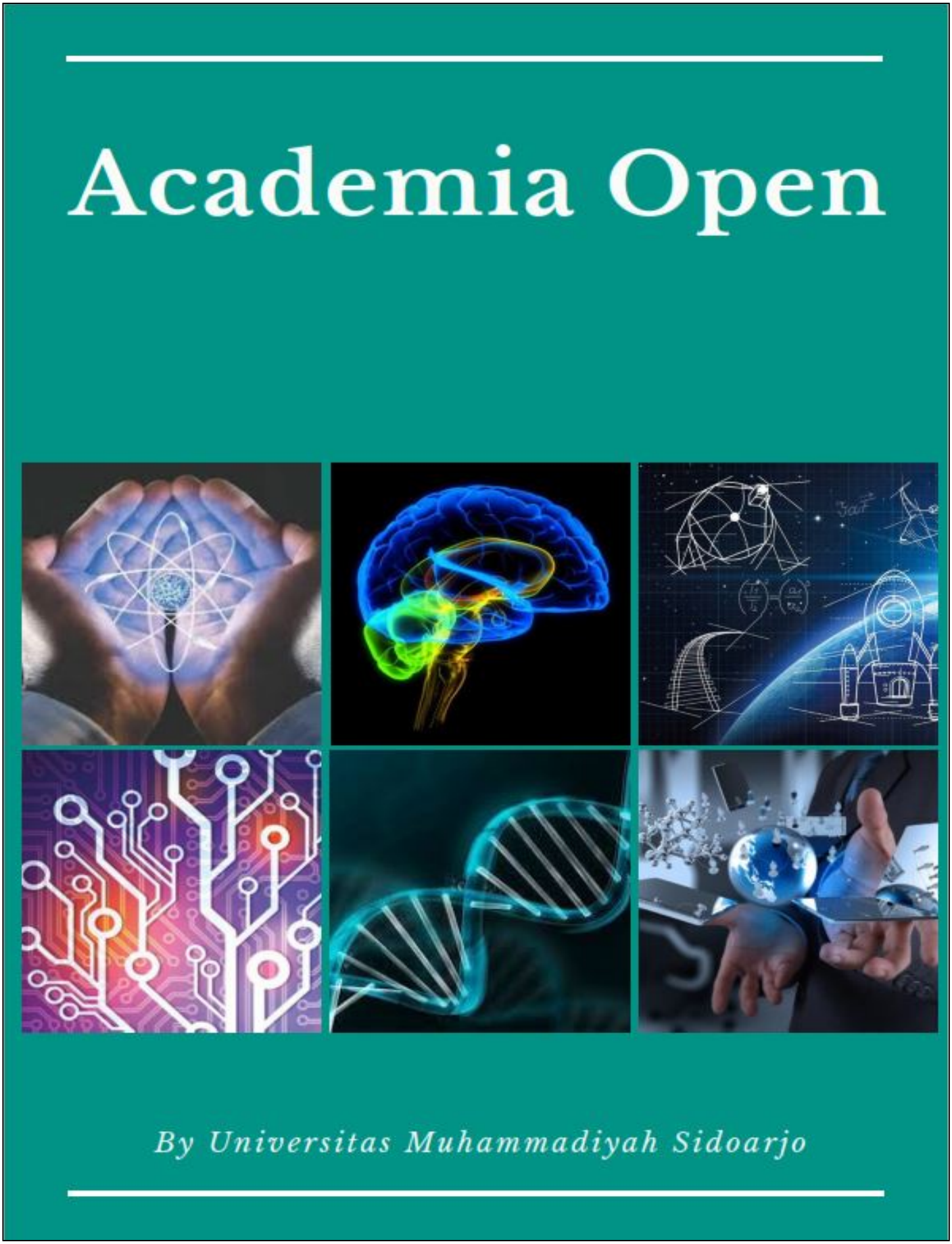

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Understanding Burn Management For Nursing Students

Memahami Manajemen Luka Bakar Untuk Mahasiswa Keperawatan

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Abstract

Background: Managing burn injuries, particularly in mass-burn scenarios, requires immediate first aid and early care, which are critical for improving outcomes. The quality of burn treatment is highly dependent on the knowledge and practical skills of nursing students, particularly those assigned to burn units. **Knowledge Gap:** Despite the critical nature of burn care, limited research has been conducted on the level of knowledge nursing students possess in this area, especially in regions like Basra, Iraq. **Aims:** This study aimed to assess the knowledge of burn management among nursing students at Basrah University, identifying gaps and correlations with sociodemographic factors. **Methodology:** A descriptive cross-sectional study was conducted among 150 nursing students at Basrah College of Nursing. Data was collected using a structured questionnaire divided into two sections: (1) sociodemographic information, and (2) burn management knowledge, assessed through a standardized 3-point Likert scale. **Results:** The majority of respondents (78% female, 22% male) were aged 19-28 years. The results revealed that students demonstrated a good level of knowledge regarding burn management. Furthermore, there was a highly significant correlation between the academic stage of the students and their test scores, suggesting that academic progression improves burn management understanding. **Novelty:** This study provides one of the first comprehensive assessments of burn care knowledge among nursing students in southern Iraq, highlighting the critical role of academic progression in enhancing practical burn care skills. **Implications:** The study suggests that incorporating practical burn care training into nursing education can significantly improve clinical outcomes in mass-burn scenarios.

Highlights:

1. Knowledge of burn care improves with academic progression among nursing students.
2. Majority of participants were female, aged 19-28 years.
3. Enhanced burn care training is essential in nursing education curricula.

Keywords: Burn management, Nursing students, Knowledge assessment, Basrah University, Cross-sectional study

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Introduction

Injuries are a major public health issue that significantly impact almost every demographic and region on Earth. Burns have long been regarded as one of the most catastrophic injuries, leading to not only fatalities but also significant psychological and economic ramifications as well as long-term physical aftereffects [1]. One kind of skin damage that may be brought on by heat, electricity, chemicals, friction, or radiation is a burn [2]. One important public health concern is burns, which are thought to be responsible for 180,000 fatalities a year, most of which take place in low- and middle-income nations [3]. Almost 11 million individuals suffered serious burns in 2018. All age groups and socioeconomic classes are susceptible to burn injuries. Every year, doctors treat an estimated 500,000 patients for mild burn injuries (Konop, 1991; Pitts, Niska et al., 2008). When it comes to a burn patient's overall care, nurses are crucial. They need to be knowledgeable about the many protocols that are accessible and may be applied to manage a particular circumstance in a logical manner. In addition to medical attention, psychological testing of the victim and their family is part of the management [4]. At the location of the accident, managing local injuries entails clearing away burnt garments, properly washing the area, and covering it with sterile clothing. Maintaining key vital functions, providing appropriate replacement therapy, and providing analgesia are examples of the treatment that is carried out in the emergency room of the relevant hospital [5,24]. Both short-term and long-term care are necessary for the management of burn victims. The aims of long-term care include wound healing, hypermetabolic response control, infection prevention, and various organ dysfunction prevention. The first therapy entails prioritising breathing, circulation, and the airway [1It is often acknowledged that one of the biggest issues after severe burns is fluid loss. Patients with burns have a better prognosis and outcome when their fluid balance is appropriately managed [6,26]. Adult and paediatric patients with burns that exceed 20% of their total body surface area (TBSA) should receive fluid resuscitation based on their weight and the amount of surface area that has been burned, according to American Burn Association standards [7]. An damage to the skin or other tissues brought on by friction, heat, cold, electricity, chemicals, or UV radiation (such as sunburn) is called a burn.[8,27] Heat from hot liquids (also known as scalding), solids, or flames is the main cause of burns.[9]Burns mostly happen at home or at work. Domestic kitchens, with their stoves, flames, and hot liquids, pose threats to homeowners. There are hazards related to fire, chemical burns, and electric burns in the workplace. Other risk factors include smoking and alcoholism. Moreover, self-harm and interpersonal aggression (attack) can result in burns. [10] People of various ages and socioeconomic backgrounds can suffer from burn injuries. Every year, an estimated 486,000 individuals need burn treatment, with around 40,000 being admitted to hospitals. The majority, 43 percent, were attributed to flames; 34 percent were scalding; nine percent were from direct source contact; four percent were electrical; three percent were chemical; two percent were just respiration; and the other five percent were from other or undefined categories. Burn injuries are excruciating, expensive, deforming, need long-term incapacity, and require intense rehabilitation treatment. Significant improvements in the morbidity and mortality of burn patients have been made possible by advancements in burn care, which include the development of specialised burn centres, early excision and grafting, infection control, appropriate fluid resuscitation, and an expanded team approach.In order to maximise patient outcomes, the nurse's responsibility within the multidisciplinary treatment team entails providing comprehensive, evidence-based care throughout all stages of burn injury recovery.[11]

Classification of burns:

Burns are categorised into four degrees based on the extent of tissue loss. [12]

1. Burns classified as superficial or first-degree injuries only affect the skin's outermost layer.[13]

Without blisters, they seem red, and the agony usually lasts for three days.[14][15,23,]

2. Burns that have partial thickness, or second-degree burns, affecting different areas of the dermis as well as the complete epidermis. They hurt and are usually connected to blister development. Healing usually takes two to three weeks, depending on the extent of the skin damage. Skin appendages and hair follicles are unharmed.There are usually blisters, and they hurt a lot.[14][13,22]

3. Burns of the third degree (full thickness), which cause the epidermis and dermis to be destroyed as well as, occasionally, underlying tissue damage. The colour of a wound might be anything from light white to burnt, red, or brown. Due to damage to the nerve fibres, the burnt region is numb. The loss of sweat glands and hair follicles as well as the damage of the microcirculation give the wound a leathery, dry appearance.Patients frequently misjudge the severity of this burn since they don't feel any pain where the injury occurred.[13][14,21]

4. Burns that penetrate deep into muscle, bone, or tissue are classified as fourth-degree burns (deep burn necrosis). [13,19][14]

Extent of Body Surface Area Injured

The rule of nines, the Lund and Browder approach, and the Palmer method are a few of the techniques used to estimate the TBS impacted by burns. These resources help the medical team decide on the course of care, which may involve sending the patient to a burn centre.

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Hospital-based burn centres have the staff and resources necessary to treat patients with burns from the moment of injury until their recovery. The American College of Surgeons provides the ABA referral criteria for a burn centre, and the ABA jointly grants burn centre certification.[16,18,20]

The Rule of Nines.The rule of nines is the most widely used technique for estimating the amount of burns in adults. Thanks to this approach, which is based on anatomic areas, which together account for around 9% of the total surface area, physicians may easily determine the amount of burns. The TBS is computed in accordance with the percentage of anatomic area that is burnt; for instance, if half of an arm were burned, the percentage of total body surface area burned would be 4.5% [17,25].

Methods

Design of the study

A research with a descriptive cross-sectional methodology was conducted at the Basra College of Nursing, including 150 students, both male and female, to assess their understanding of burn management.

Setting of the study

The current investigation was conducted in the nursing college at Basra University.

The sample of the study

150 students from the nursing school at Basra University made up a convenient sample.

Study’s instrument

Data was gathered via a questionnaire with closed-ended questions. The questionnaire is divided into two sections. The first section has five questions on the sociodemographic traits of the students, such as their age, gender, study type, residence, and graduation stage. Twenty questions make up the second section of the questionnaire, which asks about the students' understanding of burn management. For the study, a standardised 3-point Likert scale with the options YES, NO, and I DON'T KNOW was employed. 150 students were given the completed questionnaire form, which they read and completed. The researchers then gathered the completed forms, scoring each one based on the correct usual response.

Statistical analysis

The statistical package for social sciences, or SPSS, was used for the analysis.26

Descriptive and inferential Data Analysis

1- Percentage (%) 2-frequency 3- mean of scores

Result and Discussion

Result

	age			
Valid	Frequency	Percent	Valid Percent	Cumulative Percent
19-28	147	98.0	98.0	98.0
29-38	2	1.3	1.3	99.3
39-48	1	.7	.7	100.0
Total	150	100.0	100.0	

Table 1. *the distribution of the study sample according to age interval (n=150)*

The table showed that 98% were in the age interval 19-28 , 1.3 % in the interval 29-38 and only 0.7 in the 39-48

	sex			
Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Male	33	22.0	22.0	22.0
Female	117	78.0	78.0	100.0

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Total	150	100.0	100.0	

Table 2. *distribution of the students according to gender (n=150)*

The table showed that 22% of the sample were males and 78% were females

	residence			
Valid	Frequency	Percent	Valid Percent	Cumulative Percent
urban	50	33	33.3	33.3
rural	100	66.0	66.0	99.3
		.		100.0
Total	150	100.0	100.0	

Table 3. *distribution of the students according to residency (n=150)*

The table showed that 33% of the study sample were from

urban areas, and 66% from rural area.

	Stage			
Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Second	50	33	33.3	33.3
Third	50	66.0	66.0	99.3
Fourth	50	.		100.0
Total	150	100.0	100.0	

Table 4. *Distribution of the students according to the stage (n=150)*

The table showed that 33% of the study sample was from the second stage, which was equal to the third and fourth stages.

	Course			
Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Morning	122	81.3	81.3	81.3
Evening	28	18.7	18.7	100.0
Total	150	100.0	100.0	

Table 5. *Mean of scores intervals (n=150)*

The table showed that 81.3 % of the study sample was from the morning study and 18.7% from evening study.

Mean of Scores intervals	Frequencies	Percentages	Mean of Scores intervals	Frequencies
2-2.5	34	22.6 %	2-2.5	34
2.5-3	116	77.4 %	2.5-3	116
total	150	100%	total	150

Table 6. *The correlation between stage and scoring (n=150)*

The table shows the distribution of the study sample according mean of scores they got. 22.6% were within the interval 2-2.5 mean of scores which indicates a significant association between the right answer and the student's responses to the questionnaire i. e.the answer were true to some extent. 77.4% were within the interval 2.5-3 mean of scores which indicate the high significant association between the Wright answer and the student's responses for the questionnaire i. e. the answer where most of them are true.

Correlations			
	Stage	scores	
Stage	Pearson Correlation	1	.283**
	Sig. (2-tailed)		.000
	N	150	150

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scores	Pearson Correlation	.283**	1
	Sig. (2-tailed)	.000	
	N	150	150
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 7. *The correlation between stage and scoring (n=150)*

The table showed that there was a high significant association between academic stage and the scores the students got. We examine the statistical correlation between the scores of the students and other demographic features but unfortunately we did not find any correlation between them.

Discussion

We chose to investigate nursing students' understanding of burn care at the college level since burns are one of the dramatic illnesses that leave unsightly scars. As a result, proper burn therapy is essential and builds on higher level knowledge and established abilities. As a result of our study through a structured questionnaire, covering the most important subjects regarding burn . All of our students had a significant knowledge about different subjects of burn indicating that the nursing curriculum is beneficial to the student to get the most important and relevant information about burn management so that they can deal with burn in perfect way in addition it also indicate that their practical part of study in the burn unit at different hospital is knowledgeable , where they answer correctly most of the questions, the mean scores were more than 2.5 in 77.4 % of the answer. the academic stage plays an important role in the level of knowledge, where we found a highly significant association between scores and stage, indicating that, as the students advance in the stages of college they got more and more information about burn management..

Conclusion

1- Most Of the samples were in the age interval 19-28

2- 22% of the sample were males and 78% were females

3- The students had good knowledge about burn management.

4- there was a highly significant association between the academic stage and the scores the students got.

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