

## Nurses' Attitude, Practices and Barriers towards Pain Management of Elderly Patients with Cancer



(1)Azza Mohammed Khalil, (2)Eman Baleegh Meawad and (3)Soad Hassan Abd Elhameed

(1)B.SC Nursing, Faculty of Nursing, Mansoura University, Egypt

(2,3) Assistant Professor of Gerontological Nursing, Faculty of Nursing, Mansoura University, Egypt

Corresponding Author: Azza Mohammed Khalil

### 1.ABSTRACT

**Background:** The population of elderly patients is growing with increasing prevalence of cancer diagnoses and cancer-related pain syndromes. Cancer pain occur at any time in the disease's progression. It is a multidimensional and complex phenomenon that need proper assessment, management and evaluation based on current nursing knowledge and practices. Despite the fact that developing adequate pain control is a top priority for cancer patients. Many barriers to undertreatment exist among professionals, which might have an impact on successful pain management. **Aim:** to assess nurses' attitude, practices, and barriers towards pain management of elderly patients with cancer. **Method:** In this study, a descriptive correlational research design was used. The study was carried out at medical, surgical, and hematological departments in Oncology Center Mansoura University. A convenience sample of 122 nurses was used in this study. 4 tools were used to collect data.: Nurses' structured interview schedule, nurses' attitude toward pain management interview schedule, nurses' practices interview schedule regarding cancer pain management and nurses' barriers for cancer pain management interview schedule. **Results:** majority of studied nurses (82.8%) had positive attitude toward pain management, 91% of them had poor practice regarding cancer pain management and 60.7% of studied nurses had little barrier toward pain management of elderly patients with cancer. **Conclusion:** Nurses' have positive attitude and poor practices regarding pain management of elderly patients with cancer. The main barriers to effective cancer pain management were inadequate knowledge about pain management and opioids. Recommendation: developing standard guidelines for pain management for oncology hospital staff nurses.

**Keywords:** Elderly patients, cancer pain, nurses' attitude, nurses' practices, nurses' barriers, pain management.

### 2.Introduction:

Cancer is a disease that occurs when cells divide outside the control of the body<sup>1</sup>. It is one of the most important health problems facing the elderly<sup>2</sup>. Cancer is also a painful and life-threatening experience that affects all aspects of life for the elderly person, whether physical, psychological, social, and spiritual<sup>3</sup>. Cancer and its treatment result in chronic pain, which can be caused by primary or metastatic tumours, diagnostic or therapeutic procedures, or and pressure on one of the body's organs, bone, nerves, or blood vessels<sup>4-6</sup>.

More than half of cancer patients suffer from moderate-to-severe pain, often in multiple sites and be caused by a variety of etiologies and mechanisms. Pain is the most debilitating symptom of cancer, impacting approximately 66% of cancer patients<sup>7</sup>. It is a significant problem in older cancer patients, as they frequently receive suboptimal pain. Furthermore, cancer pain is a multidimensional and complicated phenomenon that need proper assessment, management, and evaluation based on nurses' knowledge and attitudes<sup>8</sup>. Nurses are the most important member

of the healthcare team for assessing and managing pain, as well as applying pharmacologic and non-pharmacologic treatments to improve outcomes for elderly cancer patients with pain<sup>9</sup>.

Undertreated cancer pain in the elderly has a negative impact on the elderly's health and quality of life, resulting in significant physical and psychological burden<sup>10,11</sup>.

Despite the fact that establishing adequate pain control is a top priority for cancer patients. Many barriers to under treatment exist among professionals, which might have an impact on effective pain management. The most important barriers are inadequate knowledge, negative attitudes and poor practices among nurses toward pain management<sup>12</sup>.

#### Aim of the study:

The study aimed to assess nurses' attitude, practices and barriers toward pain management of elderly patients with cancer.

### 3. Method

#### 3.1. Design:

This study was conducted using a descriptive (correlational) research design.

#### 3.2. Setting:

The study was carried out at the Mansoura University Oncology Center's medical, surgical, and hematological departments.

#### 3.3. Subjects:

The study included a convenience sample of 122 nurses aged 20 and up, had at least one year of experience working with older patients either part time or fulltime and more working in the prior settings throughout the data collection period.

#### 3.4. Tools

four tools were utilized to collect the relevant data for the study.

##### **Tool I: Nurses' Structured Interview Schedule.**

The researcher developed this tool to collect the necessary data as. Age, sex, marital status, educational qualification, workplace, years of practical experience, monthly salary, previous cancer training, cancer pain, and training period were all included.

##### **Tool II: Nurses' Attitude toward Cancer Pain Management Interview Schedule**

After reviewing the relevant literature, the researcher developed this tool. It was used to evaluate nurses' attitudes toward cancer pain management, as related to pain distraction, addiction to opioid, opioid treatment side effects, pain endurance and real and non-real pain treatment. It consisted of 15 items each response was coded on a scale of 1 to 5 (strongly agree = 1, agree = 2, to some extent = 3, disagree = 4, and severely disagree = 5) while reversed coding was done for questions from 11 to 15. So, the total attitude score ranged from 15 points (minimum) to 75 points (maximum), where higher score reflected positive attitude.

##### **Tool III: Nurses' Practices toward Cancer Pain Management Interview Schedule**

After reviewing the relevant literature, the researcher developed this tool. It was used to evaluate nurses' practices toward pain management of elderly patients with cancer. It included 8 questions as usage of a pain assessment tool, frequency of pain assessments, use of non-pharmacologic pain management, health teaching and documenting habits. Each question had two options: done or not done, where not done or done incorrectly will take a score of zero and done take a

score of one. So, the total practice score ranged from 0 points (minimum) to 8 points (maximum), where higher score reflected good practices.

##### **Tool IV: Nurses' Barriers toward Cancer Pain Management Interview Schedule**

After reviewing the relevant literature, the researcher developed this tool. It was created to determine nurses' barriers toward pain management of elderly cancer patients. It included 15 questions as nurses' educational preparation, practices skills and nurses' awareness of financial, legal, political and ethical concerns associated to pain management. Each question included four responses that were coded from 1 to 4 (very sufficient = 4, sufficient = 3, insufficient = 2 and very insufficient = 1), with questions 14-15 reversed coding. As a result, the total barrier score ranged from 15 points (minimum) to 60 points (maximum), where higher score indicating little barriers.

#### 3.5. Procedure

1. The director of Mansoura University's Oncology Center received an official letter from the Faculty of Nursing at Mansoura University.
2. The appropriate authorities gave their official consent to conduct the study. The director of the oncology center was informed about study' goal and data collection time.
3. Tools I (Nurses' structured interview schedule), II (Nurses' attitude toward pain management interview schedule), III (Nurses' practices interview schedule regarding cancer pain management), and IV (Nurses' barriers for cancer pain management interview schedule) were developed by the researcher After reviewing the relevant literature.
4. A Seven jury members in the fields of gerontological nursing and medical surgical nursing evaluated the study tools I, II, III, and IV for content-related validity. Suggestions of the jury members were followed, and the modification were done accordingly.
5. The test re-test method was used to determine tool reliability.
6. Informed written consent was obtained from subjects of the study.
7. A pilot study was conducted on 10% of the participants from oncology center Mansoura University to ensure that the tools are clear.
8. Each nurse was interviewed individually at each department in oncology center Mansoura University to collect the relevant data.

9. Each nurse spent between 20 and 30 minutes filling out the study tools.
10. The data was collected for three months, from January to March 2020.

### **3.6. Ethical Considerations:**

The Research Ethics Committee of the Faculty of Nursing at Mansoura University granted ethical permission. Study subjects were informed about aim, risks, benefits and procedure of the study. Participants were assured that the participation is voluntary. The study subjects' privacy and the confidentiality of the data obtained were both assured. Study subjects were informed that they had the option to withdraw from the study at any time without incurring any penalties.

### **3.7. Statistical analysis**

The statistical package of social science "SPSS" software version 16.0 was used to analyze the data. Quantitative variables were presented as number and percent. A descriptive analysis was done in the form of frequencies, mean and standard deviation. While analytical statistics was done using independent t- test to compare two groups and for comparisons of more than two groups, use the one-way ANOVA test. Pearson correlation coefficient was used to quantify association between different variables. If the difference was  $p \leq 0.05$ , it was judged significant. Graphs were created using SPSS and Microsoft Excel for data visualization.

## **4. Results:**

**Table 1** shows that, the age of the studied nurses ranged from 25 to more than 30 years, with 68.9% of them being between 25 and 30 years and more. Females were more prevalent among the studied nurses, 68% of studied nurses were married, nearly half of them (56.4%) had technical institute, 49.2% of them working in surgical unit and half having experience ranging from one to ten years.

**Figure 1** represents attendance at "cancer" training courses. The bulk of the nurses in the study (84.4%) didn't attend. training courses on cancer.

**Figure 2** represents Attendance at "cancer pain for the elderly" training courses. It was observed that the majority of studied nurses (94.3 %) didn't attend courses **on cancer pain for the elderly**.

**Figure 3** represents Attendance in training courses on "the effect of ageing on cancer pain" It can be observed that the majority of studied nurses (93.4 %) didn't attend courses.

**Figure 4** represents the studied nurses' attitude towards pain management of elderly

patients with cancer. The majority of the nurses surveyed (82.8%) have positive attitude toward pain management.

**Figure 5** represents the level of practices of studied nurses towards pain management of elderly patients with cancer. The majority of studied nurses 91% have **poor** practices.

**Figure 6** represents level of barriers that faced studied nurses in pain management of elderly patients with cancer. It can be observed that over two third of studied nurses have little barriers toward pain management of elderly patients with cancer, whereas 39.3% have many **barriers**.

**Table 2** points out the correlation between barriers score, attitude score and practice score toward pain management of elderly patients with cancer. Barrier, attitude, and practices were found to have statistically significant negative correlations ( $p < 0.001$ ,  $r = -0.448$  and  $p < 0.001$ ,  $r = -0.472$ , respectively).

**Figure 7** illustrate the correlation between a nurses' barriers and attitude toward pain management in elderly cancer patients. There was a statistically significant negative correlation between barrier and attitude.

**Figure 8** illustrate the correlation between a nurses' barriers and practices toward pain management of elderly with cancer. The barrier and practices were shown to have a statistically significant negative correlation

## **5. Discussion**

Cancer Pain has a negative impact on the quality of life of older patients, while cancer pain management in the elderly is a major concern (Antwi, etal, 2019)<sup>13</sup>.

Nurses play an important role in cancer pain management, so they must be well-prepared and knowledgeable about pain assessment and management. They should also avoid having a negative attitude toward pain management, which can lead to ineffective pain management practises. (Salameh, 2018)<sup>14</sup>.

the present study showed that, studied nurses' age ranged from 25 to more than 30 years. This finding can be related to the majority of the nurses working in the departments are recent graduates and of a young age.

This finding is in line with research conducted in Uganda by Kiwanuka et al., (2018)<sup>15</sup>, which found that the majority of the sample was between the ages of 20 and 40. The majority of nurses in this study were female. This is due to the fact that the majority of nurses in Egypt are female,

and the number of female nurses in nursing fields is higher than male nurses. This finding is reinforced by study done in Malaysia by Alzghoul et al., (2016)<sup>16</sup>, who found that the majority of their participants were females. In contrast, a study conducted by Sameen et al., (2015)<sup>9</sup> in Baghdad and Alnajjar et al., (2019)<sup>17</sup> in Jordan found that the majority of the nurses studied were male.

The present study revealed that more than half of the nurses graduated from a technical nursing institute. According to studies conducted by Samarkandi (2018)<sup>18</sup> in Saudi Arabia, Manwere et al., (2015)<sup>19</sup> in Zimbabwe, and Kiwanuka et al., (2018)<sup>15</sup> in Uganda, revealed that majority of the nurses had a nursing diploma. In contrast, other studies done in Southeast Ethiopia by Wurjine et al., (2018)<sup>20</sup> and in Jordan by Shoqirat et al., (2019)<sup>21</sup> found that the majority of the participants had bachelor's degrees.

The majority of the nurses investigated worked in surgical units, according to the findings of this study. This finding is consistent with research by Samarkandi et al., (2018)<sup>18</sup> in Saudi Arabia, which found that the majority of participants worked in surgical wards.

In terms of years of experience, the current study found that half of the nurses studied had between one and ten years of experience. This finding backs with the findings of Manwere et al., (2015)<sup>19</sup> in Zimbabwe and Kiwanuka et al., (2015)<sup>20</sup> in Uganda by Kiwanuka et al., (2018).<sup>15</sup>

The importance of continuing education courses for nurses in cancer pain management is critical for enhancing professionals' knowledge and attitudes regarding cancer pain management. (Ogboli-Nwasor et al., 2013)<sup>22</sup>. according to the findings of this study. The majority of nurses did not attend training courses on cancer, cancer pain in the elderly, or the impact of ageing on cancer pain. This result supports the result of study done in Ethiopia by Admass et al., (2020)<sup>23</sup> who revealed that more than half of the study participants did not receive pain management training. In contrast, Al-Atiyyat et al., (2019)<sup>24</sup> and Kiwanuka et al., (2018)<sup>15</sup> conducted studies in the United Arab Emirates and Uganda, respectively, and found that more than three quarters of the nurses investigated received formal pain management education.

Nurses' attitudes are the key to success cancer pain management process and have an impact on pain management outcomes (Alnajjar et al., (2019)<sup>17</sup>. The majority of the nurses in the current study have positive attitude toward cancer pain management. This result agrees with a study done in Philippine

by Antwi et al., (2019)<sup>13</sup> who concluded that nurses had a good attitude toward employing physical therapy as a non-pharmacologic pain management option. Similarly, Yava, et al. (2013)<sup>25</sup> found that nurses have a good attitude toward pain management in a study conducted in Turkey.

On the other side, Liyew et al., (2020)<sup>26</sup> found that nurses at the University of Gondar hospital had a less favourable attitude toward pain management. Another study in Ethiopia by Admass et al., (2020)<sup>23</sup> found that the majority of oncology nurses had a bad attitude toward cancer pain management.

Oncology nurses play a crucial role in cancer pain management and must be really well-informed in order to practices effectively (Alzghoul et al., (2016)<sup>16</sup>. According to the findings of this study, the majority of nurses investigated had poor practice toward cancer pain management. The findings of current study are similar to those of studies conducted in Korea by Jho et al., (2014)<sup>27</sup> and in Addis Ababa by Kassa et al., (2014)<sup>28</sup>, which found that nurses have inadequate pain management practises. In contrast, a study conducted in Uganda by Kiwanuka et al., (2018)<sup>15</sup> who found that nurses at the Uganda Cancer Institute have good pain assessment techniques.

According to the findings, more than half of studied nurses little barriers to cancer pain management, while more than a third have numerous barriers. Similar finding were found in studies conducted in Rwanda by Benimana (2017)<sup>29</sup>, in addis ababa by Yosef (2015)<sup>30</sup> and in in palestine by Toba et al., (2019)<sup>31</sup>.

according to the findings of this study, a statistically significant weak correlation between barriers, attitude and practices. This study found that studied nurses with little barriers toward pain management of elderly patients with cancer have positive attitude and good practices than studied nurses with many barriers. This result reflects that nurse should improve their practices and attitude through continues education training in order to improve their attitude and practices and decrease barriers toward pain management of elderly patients with cancer. This finding is consistent with studies conducted in Bangladesh by Basak, (2010)<sup>32</sup> and Hossain et al., (2010)<sup>33</sup>, which found a weak correlation between nurses' attitudes, pain management practices and barriers.

In contrast study in Ireland and Jordan by Al Omari et al., (2021)<sup>34</sup> discovered a strong positive relationship between attitudes towards pain and their pain management practices of elderly patients. moreover, study in Eritrea by Kahsay, D. T., and

Pitkajarvi, M (2019)<sup>35</sup> discovered that emergency nurses' perceived barriers are significantly and positively correlated with their attitude level and practises.

**6. Conclusion**

Based on the findings of the current study. It can be concluded that, nurses have positive attitudes and poor practices regarding pain management of elderly patients with cancer. The most commonly barriers facing nurses in management of elderly patient with cancer were inadequate motivation, insufficient staff preparation, training and education about pain management. As well as nurses' commitment to provide adequate knowledge about pain, pain management and opioids the older patients.

**7. Recommendations**

The following recommendations are suggested as a result of the findings:

- 1-Developing standard guidelines about pain management for oncology hospital staff nurses to improve their knowledge, practices toward pain management.
- 2-In service training programs should be organized to develop nurses' competence in cancer pain management of older patients.
- 3- 3- Designing educational programs for nurses about effective pain management and care of elderly cancer patients to improve their attitudes and practices.

**8. Acknowledgment**

We would like to thank all nurses at Oncology Center Mansoura University.

**Table 1: Distribution of studied nurses according to their sociodemographic characteristics (N=122)**

Sociodemographic characteristics	N=122	%
<b>Age</b>		
< 25 years	38	31.1
25 < 30 years	40	32.8
≥ 30 years	44	36.1
<b>Gender</b>		
Female	106	86.9
Male	16	13.1
<b>Marital status</b>		
Married	83	68.0
single	32	26.2
Widow / divorced	7	5.8
<b>Educational level</b>		
Secondary diploma	37	30.3
Technical institute	70	57.4
Bachelor	15	12.3
<b>Place of work</b>		
Surgical unit	60	49.2
Medical unit	36	29.5
Hematology	26	21.3
<b>Years of experience</b>		
< 1 year	12	9.8
1-10 years	61	50.0
> 10 years	49	40.2
<b>Monthly salary</b>		
≥ 1500 pounds	119	97.5
< 1500 pounds	3	2.5
<b>Total</b>	<b>122</b>	<b>100</b>

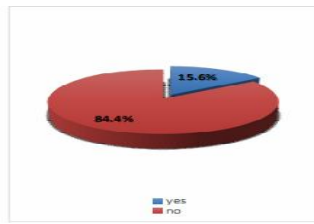


Figure 1. distribution of studied nurses according to attending previous training courses on “cancer”.

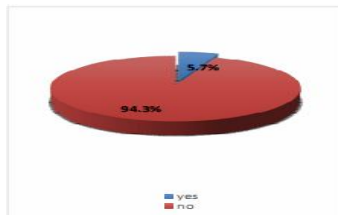


Figure 2. distribution of studied nurses according to attending previous training courses on “cancer pain for the elderly”.

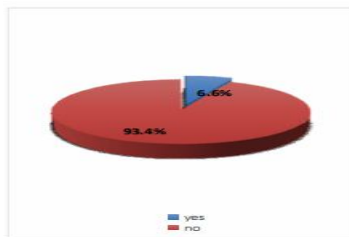


Figure 3. distribution of studied nurses according to attending previous training courses on “the effect of aging on cancer pain”.

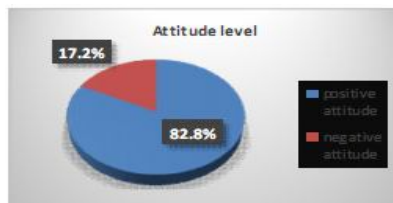


Figure 4. Attitude level of studied nurses towards pain management of elderly patients with cancer.



Figure 5. Practices level of studied nurses in pain management of elderly patients with cancer

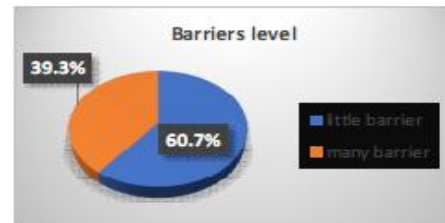


Figure 6 . Barrier's level of studied nurses toward pain management of elderly patients with cancer.

Table 2: Correlation between barriers score, attitude score and practices score toward pain management of elderly patient with cancer.

	Barrier score	
	R	P value*
Attitude score	0.448	<0.001
Practice score	0.472	<0.001

r: for Pearson correlation

P value significant if  $\leq 0.05$

If  $r \leq 0.5$ = weak correlation

If  $r > 0.5$ = strong correlation.

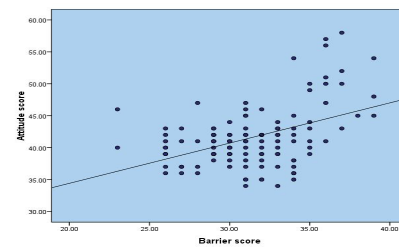


Figure 7. Correlation between nurses barriers and attitude toward pain management of elderly patients with cancer.

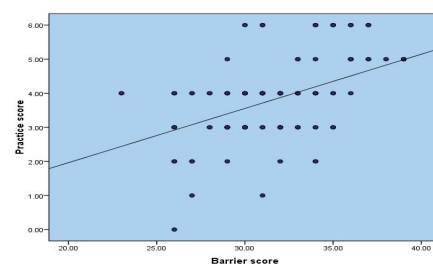


Figure 8: Correlation between nurses barriers and practice toward pain management of elderly patients with cancer.

## 9. References

- (1)National Cancer Institute (2018). NCI dictionary of medical terms:cancer Retrieved from<https://www.cancer.gov>. Accessed on – April 18, 2018.

- (2) Eaton LH, Meins AR, Mitchell PH, Voss J, Doorenbos AZ. Evidence-based practice beliefs and behaviors of nurses providing cancer pain management: A mixed-methods approach. *Oncol Nurs Forum* 2015;42:165-73.
- (3) Jan et al., (2012). *Nursing older Adults*, 1sted, New York: McGraw-Hill Company, 420-31.
- (4) Fu, J., Wang, D., & Yu, F. (2014) The effectiveness of patient based pain education program to relieve cancer pain: a Meta-analysis. *Hu Li Guan Li Za Zhi* (in Chinese), 14, 20-2.
- (5) Gehdoo, R. P. (2006): Cancer Pain Management. *Indian Journal of Anaesthesia*, 50(5):375 retrieved from <http://medind.nie>.
- (6) Salim, N., Al-Attyat, N., Tuffaha, M., Abu Nigim, H., & Brant, J. (2017). Knowledge and Attitude of Oncology Nurses toward Cancer Pain Management: A Review. *Arch Med*. 2017, 9:2. doi: 10.21767/1989-5216.1000210.
- (7) Caraceni, A., & Shkodra, M. (2019). Cancer pain assessment and classification. *Cancers*, 11(4), 510; doi:10.3390/cancers11040510.
- (8) Lee YJ, Hyun MK, Jung YJ, Kang MJ, Keam B,. (2014) Effectiveness of education interventions for the management of cancer pain: a systematic review. *Asian Pac J Cancer Prev* 15: 4787-93.
- (9) Sameen, F. Y., & Al-Attar, W. M. A. (2015). Nurse's Knowledge and Attitudes toward Cancer Pain Management at Baghdad Hospitals. *kufa Journal for Nursing sciences*, 5(3), 134-143..
- (10) Alqahtani, M., & Jones, L. K. (2015). Quantitative study of oncology nurses' knowledge and attitudes towards pain management in Saudi Arabian hospitals. *European Journal of Oncology Nursing*, 19(1), 44-49.
- (11) Brant JM, Keller L, McLeod K, Yeh C, Eaton LH (2017). Chronic and refractory pain: A Systematic review of pharmacologic management in oncology. *Clinical Journal of Oncology Nursing*;21:31–53.
- (12) Saifan, A. R., Bashayreh, I. H., Al-Ghabeesh, S. H., Batiha, A. M., Alrimawi, I., Al-Saraireh, M., & Al-Momani, M. M. (2019). Exploring factors among healthcare professionals that inhibit effective pain management in cancer patients. *Central European Journal of Nursing and Midwifery*, 10(1):967–976. Available at <https://doi.org/10.15452/cejnm.2019.10.0003.13>
- (13) Antwi, F. B., Osei, S. A., Peprah, W. K., & Antwi, E. (2019). Nurses' attitude and pain assessment practices on non-pharmacologic pain management among patients with cephalalgia. In *A paper presented at the 1st International Research Forum. On Fire: Excellence in Research*, Adventist University of the Philippines, Putting Kahoy, Silang, Cavite, and April (Vol. 25).
- (14) Salameh, B. (2018). Nurses' knowledge regarding pain management in high acuity care units: A case study of Palestine. *International Journal of Health Sciences*, 12(3), 51
- (15) Kiwanuka, F., & Masaba, R. (2018). Nurses' knowledge, attitude and practices regarding pain assessment among patients with cancer at Uganda Cancer Institute. *Journal of Research in Clinical Medicine*, 6(2), 72-79 Doi: 10.15171/jarcm.2018.011.
- (16) Alzghoul, B. I., & Abdullah, N. A. C. (2016). Pain management practices by nurses: an application of the knowledge, attitude and practices (KAP) model. *Global journal of health science*, 8(6), 154
- (17) Alnajjar, M. K., Darawad, M. W., Alshahwan, S. S., & Samarkandi, O. A. (2019). Knowledge and attitudes toward cancer pain management
- (18) Samarkandi, O. A. (2018). Knowledge and attitudes of nurses toward pain management. *Saudi journal of anaesthesia*, 12(2), 220.
- (19) Manwere, A., Chipfuwa, T., Mukwamba, M. M., & Chironda, G. (2015). Knowledge and attitudes of registered nurses towards pain management of adult medical patients: a case of Bindura hospital. *Health Science Journal*, 9(4), 1.
- (20) Wurjine, T. H., & Nigussie, B. G. (2018). Knowledge, attitudes and practices of nurses regarding to post-operative pain management at hospitals of Arsi zone, Southeast Ethiopia, 2018. *Women's Health*, 7(5), 130-135.
- (21) Shoqirat, N., Mahasneh, D., Al-Khawaldeh, O., & Al Hadid, L. (2019). Nurses' knowledge, attitudes, and barriers toward pain management among postoperative patients in Jordan. *Journal of PeriAnesthesia Nursing*, 34(2), 359-367

- (22) Ogboli-Nwasor, E. O., Makama, J. G., & Yusufu, L. M. D. (2013). Evaluation of knowledge of cancer pain management among medical practitioners in a low-resource setting. *Journal of pain research*, 6, 71
- (23) Admass, B. A., Endalew, N. S., Tawuye, H. Y., & Mersha, A. T. (2020). Knowledge and Attitude of Ethiopian Oncology Nurses About Cancer Pain Management: National Survey. *Cancer Management and Research*, 12, 9045.
- (24) Al-Atiyyat, N., Salim, N. A., Tuffaha, M. G., Nigim, H. A. A., Mah'd Saleh, M., Alkhodary, M. E., & Brant, J. M. (2019). A Survey of the Knowledge and Attitudes of Oncology Nurses toward Pain in United Arab Emirates Oncology Settings. *Pain Management Nursing*, 20(3), 276-283.
- (25) Yava, A., Çicek, H., Tosun, N., Özcan, C., Yildiz, D., & Dizer, B. (2013). Knowledge and Attitudes of Nurses about Pain Management in Turkey. *International Journal of Caring Sciences*, 6(3)
- (26) Liyew, B., Dejen Tilahun, A., & Habtie Bayu, N. (2020). Knowledge and Attitude towards Pain Management among Nurses Working at University of Gondar Comprehensive Specialized Hospital, Northwest Ethiopia. *Pain Research and Management*, 2020
- (27) Jho HJ, Kim Y, Kong KA, Kim DH, Choi JY, Nam EJ, Choi JY, Koh S, Hwang KO, Baek SK, et al. (2014) Knowledge, practices, and perceived barriers regarding cancer pain management among physicians and nurses in Korea: a nationwide multicenter survey. *PLoS One*. ;9(8):e105900.
- (28) Kassa RN, Kassa GM (2014) Nurses' Attitude, Practice and Barriers toward Cancer Pain Management, Addis Ababa, Ethiopia. *J Cancer Sci* 6: 483-487. doi:10.4172/1948-5956.1000312.
- (29) Benimana, O. (2017). Knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients, in one Referral Hospital in Rwanda (Doctoral dissertation, University of Rwanda).
- (30) Yosef Tibebe (2015). Knowledge , attitudes and perceived barriers on postoperative pain management among anesthetists ' in addis ababa government hospitals , addis ababa-Ethiopia, Page: 24-26.
- (31) Toba HA, Samara AM, Zyoud SH (2019). Nurses' knowledge, perceived barriers, and practices regarding cancer pain management: a cross-sectional study from Palestine 23;19(1):167. doi: 10.1186/s12909-019-1613-z.
- (32) Basak, S. (2010). Knowledge and attitudes of nurses and their practices regarding post-operative pain management in Bangladesh (Master dissertation, Prince of Songkla University, Thailand). Retrieved from <http://kb.psu.ac.th/psukb/bitstream/2010/7827/1/320221>.
- (33) Hossain, M. S. (2010). Nurses' knowledge and attitudes, and pain management practice of post-operative children in Bangladesh (Master dissertation, Prince of Songkla University, Southern Thailand). Retrieved from <http://kb.psu.ac.th/psukb/bitstream/2010/7826/1/325999>.
- (34) Al Omari, D., Alhabahbeh, A., Subih, M., & Aljabery, A. (2021). Pain management in the older adult: The relationship between nurses' knowledge, attitudes and nurses' practice in Ireland and Jordan. *Applied Nursing Research*, 57, 151388.
- (35) Kahsay, D. T., & Pitkäjärvi, M. (2019). Emergency nurses knowledge, attitude and perceived barriers regarding pain Management in Resource-Limited Settings: cross-sectional study. *BMC nursing*, 18(1), 1-13.