

level of Knowledge and attitude on final year nursing students regarding pain assessment and management at Asmara college of health sciences ,Eritrea,2018

Tecleab Okubai Gebregiorgis (✉ fanuel19855@gmail.com)

Research article

Keywords: Nursing Students, Knowledge, Attitude, Pain Assessment, and Management

Posted Date: November 19th, 2019

DOI: <https://doi.org/10.21203/rs.2.17423/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Abstract

Background Nurse's knowledge and attitude towards pain management have been reported to be inadequate throughout the world. This research was carried out to study the level of knowledge and attitude on final year nursing students regarding pain assessment & management to 190 students in 2018.

Method The study design was descriptive and cross-sectional. The study tool was an adopted and standardized self-administered questionnaire. Data analysis was carried out using SPSS applications version 22. The respondent's level of knowledge and attitude about pain assessment & management was determined using descriptive statistics and independent T-test method. Statistical significance was maintained when $P < 0.05$.

Result The average mean percent score was ($M=47.7 \pm 11.5SD$), it was below the passing score (80%) for this research.

Conclusion This research highlighted that the school of Nursing should critically review its curriculums, determine whether students were getting evidence-based and up to date information about pain assessment and management.

Background

Background: Relief from pain is everyone's right and is part of a fundamental human right to health (1). Pain has been reported as one of the most common presenting complaints in the acute care units like an emergency, ICU and other Departments. Many types of research proved that pain as a patient's symptom had been underestimated by all health professionals similarly (7). It is very unlikely as a nurse to be assigned in a health care setting where there is no pain. As a result, as a frontline health professional, no matter their specialization is, nursing students should be equipped with adequate knowledge and attitude regarding pain assessment & management before they join their respective work of departments. Nurses as the primary and frontline caregivers in health care settings, they must have adequate knowledge and proper attitude towards pain management (18). However, the nurse's knowledge and attitude towards pain management have been reported to be inadequate throughout the world (13, 17, 18 and 20).

Inadequately managed Pain has many consequences to the patient, family, health professionals and the society (14, 22). Patients may have emotional reactions related to pain such as sleeplessness, anxiety, and hopelessness which is followed by a social dimension which consists of unusual behaviors expressed by the patient in response to the unpleasant life experience (5, 6, 22 and 25). Untreated Pain has additional risks such as prolonged hospital stay, delayed recovery and, developing chronic and persistent pain (14). Nurses can have a vital role in controlling patients' pain and the associated discomfort to patients (13). The nurses' contribution in assessment, implementation of evidence-based pain management strategies and monitoring patients' response to pain management are vital to successful pain control (21). Moreover, newly graduated nursing students were expected to join the working force of the nursing profession in the health care setting with up to dated knowledge and evidence-based nursing sciences. Therefore, the main objective of this study was to assess the final year nursing students' knowledge and attitude regarding pain assessment & management before they deliver it to patient care.

Problem statement: As per the literature & articles reviewed, the educational gaps seen in the curriculum and inadequacy of pain assessment & management existed on the students during their practical clinical exposures, it was highly important to assess the knowledge and attitude of final year nursing students regarding pain assessment & management before they started the independent patient care. The objective of this research was to know the level of knowledge and attitude of final year nursing students, compare the differences in knowledge and attitude between different specialties of nursing and determine if an association exists between nurses' demographic variables and level of knowledge and attitude about pain assessment & management.

Hypothesis: H_0 = There was no significant gap in the knowledge and attitude of final year students regarding pain assessment & management. H_1 = There was a significant gap in the knowledge and attitude of final year nursing students regarding pain assessment & management.

This research will have high Significance to the school of nursing and its department to revise their curriculum to incorporate effective courses about pain assessment and pain management. They should also have to give proper training about adequate knowledge and attitude regarding pain assessment & management when joined to the working force of the nursing profession.

Methodology

The present study used a descriptive, cross-sectional research design was applied to determine the level of knowledge and attitude of nurses related to pain assessment & management at Asmara College of Health Sciences (ACHS) on ($n = 190$) final year nursing students in the year of 2018. Asmara College of health is one of the eight colleges under the higher board of education and research institution (HBERI), by now it has six big schools running under its academic rules and regulation, including the school of nursing. School of nursing, also has eight departments. Overall the selected school occupied approximately ($n = 200$) final year nursing students. Therefore the study population was all final year nursing studying students in Asmara College of Health Sciences in academic year 2017/18, which had a minimum requirement of the final year studying academic status.

The research tool was a standardized self-administered questionnaire, designed to assess the knowledge and attitude of nurses on pain assessment and management. This "Knowledge & Attitudes Survey Regarding Pain" tool developed in 1987 by Betty Ferrell and Margo McCafferty, and revised in 2014 (8). The questionnaire was administered in the English language because it is a medium of instruction in nursing education in Eritrea. Data were analyzed with the help of SPSS version 22. variables were summarized by using descriptive statistics in table and graph form. One Way ANOVA and Independent T-test were used to see the difference in mean average score. The association between knowledge and attitude with socio-demographic data was carried out by Pearson's correlation statistical test method. The Hypothesis was tested using One Sample T-test. Statistical significance was maintained when $P < 0.05$. The respondent's level of knowledge and attitude about assessment and management of pain was determined using descriptive and T-test method. Nurses who scored 32 (80%) and above from 36 knowledge & attitude questions were considered as had adequate knowledge & attitude about pain management (8).

Validity and reliability of the tool were established (8). A pilot study was carried out using a small sample of subjects (10%), on students completed their academy before and waiting to be assigned to the ministry to recognize the weakness, strength, feasibility, and consistency of the questionnaire and methodology.

The research result was presented to the school of nursing, Asmara College of Health Sciences, School of Medicine and Ministry of Health Libraries in the form of soft and hard copy to increase students' awareness on knowledge & attitude regarding pain assessment & management.

Permission was obtained from the Proposal Review and Ethical Committee of the Asmara College of Health Sciences. At last written informed consent was obtained from each respondent after a full, thorough explanation of the aim and potential outcomes of participating in the study. Also, the anonymity of the respondents was assured by not recording names of the respondents and by allowing only the researchers have access to the raw data.

Results

Characteristics Of Final Fear Nursing Students.

One hundred ninety participants (190) were included in this study. The study revealed that majority of the respondents (39.5%) were Diploma, (60.5%) were from age of 19–24, (43.7%) were male, (56.3%) said no any previous training on pain, (63.7%) stated yes they had taken course on pain, (40%) & (42%) had three and four years of study in nursing respectively, 84% were Christian, (64%) were with no work category/work experience, (88%) were Tigrigna, (82%) were in general nursing program, and 59% were having commutative GPA of 2.745–3.24.

Table 1: Comparison of Knowledge and Attitude average mean percent Score with Different Specialist/study area. One hundred ninety respondents (190) were assessed if they had differences in their score's related to knowledge and attitude about pain management & assessment. Relating to any previous training about pain assessment and management 83 (43.7%) said yes, but 107 (56.3) stated no previous training. Besides Majority of the respondent 121 (63.7%) had taken any course regarding pain, but 69 (36.3%) didn't.

Most of the respondents were Christian 159 (84%) and Moslem 26 (14%). Majority of them mentioned no work experience (64.7%) and the rest had work experience (35%). Ethnicity was used as independent variable and result showed that 88% were Tigrigna followed by Tigre (7.4 %) and Bilen (1.6%) Also, most of the respondents were generic students 118 (62%) and 72 (38%) were upgrading (AP).

Descriptive statistical analysis was done about the years of study in nursing and scores for the respondents. The highest score was from those who studied six years followed by 7 & 5 years (62%, 60%, and 59%) respectively. But the majority of the respondents were those who studied for three years and scored 75 (43%). Specialist of nursing and/or type of nursing program involved was also used as study variables and the majority of the respondent (82%) were in general nursing program, Anesthesia (8.9%) and Midwifery. The mean score of respondents by age group was below the satisfactory range of score (80%). The highest scores were from Postgraduate anesthesia (PANS) from age of <26 (69.4) and 27–53 (63.±8). Moreover, the score for anesthesia from the age of 23–32 and Postgraduate Midwifery (PMD) from the age of 23–26 was (66.7±6SD and 60±2) respectively. The lowest score, by comparison, was from Diploma age of 19–24 (43±9 SD). Majority of the respondents were those who had a GPA of 2.745 to 3.24 (59%). but highest mean average percent score was from those with commutative GPA > = 3.75 (56±8), but others had similar mean average percent score about knowledge and attitude regarding pain assessment & management on final years nursing students.

Table 2: shows an association of socio-demographic variables with the average means percent scores. A correlational analysis with selected variables showed that only level of education ($r = .479$, $p = .000$), age ($r = .32$, $p = .000$), years of study ($r = 0.477^{**}$, $p = .000$), cumulative GPA ($r = 0.306$, $p = .000$) and placement of study ($r = -0.189^{**}$, $p = .000$) had an association with percent knowledge and attitude score on pain assessment and management, but the rest had no statistically significant association. *Fig. 1: displays the mean average/percent score of the respondents*, which was ($M = 17 \pm 4.1SD$) and the average percent score was ($M = 17 \pm 4.1SD$) respectively.

Fig. 2: illustrate One sample T-test for the hypothesis test. One sample test for analysis of average percent score with 95% CI (46 - 49.4, $T = 57.2$), which was greater than the interval limit. Hence the null hypothesis was rejected but the alternative was accepted. *Fig. 3: Demonstrate Level of knowledge and attitude of final year nursing students.* The average percent score was $M = 17 \pm 4.1SD$, the lower mean percent average score was 22 and the highest was 94.4, which was below eighty percent (80%).

Discussion

Characteristics of the Final Year Nursing Students

The present study used a descriptive cross-sectional design to determine the level of knowledge and attitude on ($n = 190$) final year nursing students related to pain assessment and management at Asmara College of Health Sciences in 2018. The result displayed that knowledge and attitude on ($n = 190$) final year nursing students nurses related to pain assessment and management was not satisfactory.

In the present study majority of the respondents were Diploma (39.5%), from age of 19–24 were (39.7%), (60.5%) were male, (56.3) mentioned no training on pain, (63.7%) had taken course on pain, (40%) & (42%) had three and four years of study in nursing respectively, 84% were Christian, (64%) were with no work category/work experience, 88% were Tigrigna by ethnicity, 82% were placed in the general nursing program and 59% was having commutative GPA of 2.75–3.24.

This finding was supported on a similar study by (25) carried out research entitled 'medical nurse's knowledge and attitude regarding pain management' on 75 nurses and his study revealed that there were 62 females (82.7%) and (17.3%) males. There were (45.3%) of nurses between the ages of 20 to 29. This small difference could be due to increasing awareness of health profession information in Eritrea and time of the study.

Moreover, this table also demonstrated if they were given any previous training regarding pain assessment and management, 83 (43.7%) said yes, but 107(56.3%) stated no previous training. A descriptive analysis on the course was taken and the percent score of respondents about pain management and assessment from above table showed the majority of the respondent 121 (63.7%) said yes, but 69 (36.3%) did not take any course. Also, the current study agreed with (3) which had revealed that (52%) of nurses reported no previous pain education in the last five years.

On the other hand, this study found out the year/s of study in nursing by average percent score of the respondents. The highest scores were from those who had studied six Years 5(62%) followed by 7&5 years 11 (59.8%) and 18 (59%) respectively. Majority of the respondents were those who studied 3 years scored 75(43%), but all scored below the satisfactory result (80%). Most of the respondents by religion were Christian 159 (84%) and Moslem were 26 (14%) and the rest were included in other religions scored. Work category/experience was also used as a variable to study knowledge and attitude about pain assessment& management for final year nursing students. The majority said no work experience (64.7%) and the rest had work experience (35%). Majority of the ethnicity group (88%) were tigrigna followed by tigre (7.4 2), bilen (1.6%) and SAHO (1.1%). This table displayed Most of the respondents were AP 72 (38%) and generic students were 118 (62%). Specialist of nursing or type of nursing program involvement was also used as a variable of study. majority of the respondent 82% were in general nursing program, 8.9% were Anesthesia and 8.9% were Midwifery. Furthermost respondents were those who have a score of 2.745 to 3.24 (59%), but highest mean average percent score was from commutative GPA > = 3.75 (M = 56±8SD), but others had similar mean average percent score about knowledge and attitude regarding pain assessment & management on final years nursing students.

But there was no similar study arguing or supporting the above new finding for this research.

Table 1: Comparison of Knowledge and Attitude average Score with selected variables

This table presented the comparison of mean percent score of the respondents with different variables. Generally, all scores were below the satisfactory score of limit. Level of the study was compared by using diploma, Bachelor and masters. The mean score of masters was higher than the mean score of diploma and bachelors. This study was similar research conducted in Turkey (26), nurses with the highest educational level had significantly higher mean score than those with lower educational level ($p = 0.001$) and on another study nurses with higher educational level scored significantly higher mean score than nurses who had a lower educational level (19).

Using analysis of variance age was significant for the mean average percent score at ($P < .000$). There was a difference between the age group mean score among them. Moreover, there was moderate positive associational between Age and mean percent average score ($r = 0.352, p = .000$). On the present study, most were upgrading students, having a different year of experience in the ministry before they join the college.

To the contrary on the two studies (26, 19) no significant difference was found between the ages of the nurses, nurses work experience and the mean score of knowledge and attitude.

The mean percent score of the male was slightly higher than females, independent T-test showed ($t = 1.2, p = .23$), but not a statistically significant difference. When respondents were asked about any official training given before those who took were (47.3%) and did not took scores (48%). independent T-test showed this was not statistically significant. but In a research conducted in Turkey (26), nurses who had training about the pain after graduation and nurses who read books, journals on pain and its management had significantly higher mean score, in both cases p -value < 0.0001. This difference could be due to the time of study, geographical and cultural difference from country to country.

The number of study in the year was analyzed by ANOVA, the highest score was from those who studied six years and seven years. All the religions were having the same score, but both were not statically significant for the mean scores difference. On the same research (26), there was no significant relationship found between age, work experience, rank, and the nurses' knowledge and attitude.

Besidesdes they were asked if they took any course regarding pain assessment and management, those who took scored 47.7% and those who did not take scored 52.3%. Nevertheless, independent T-test presented that this was not statically significant. A descriptive correlational design study conducted in the USA (23), nurses who attended courses or programs about pain management scored greater than those who had no training ($P < 0.001$) (7).

Age was also studied and categorized, the highest score by age was from PANS< = 26, PANS 27–53 and PM 23–26, which was also statistically significant for its variance at ($P = .000$). In contrary a research conducted in Turkey (26) no significant association was found between age, work experience, rank, and nurses' knowledge and attitude.

Work experience or work category was also used as a variable for the studying of pain assessments and management. Those who worked scored 64% and those who did not score 35%, which was not statistically significant for the difference. Another similar study that looked if the difference in knowledge and attitude exists between oncology and non-oncology nurses using the same instrument found no difference between these groups of nurses (19). The highest mean percent score by ethnicity was from Blien and Saho and Tigre had not statically significant.

Cumulative GPA was statistically significant at ($P = .001$). The highest score was from those who have 3.25 to 3.49, 3.5 to 3.74 and > = 3.75. Placement of the respondent was also compared and analyzed by independent T-test. Generic students had a higher score than AP students, which was statistically significant ($P = .009$). In research conducted in Turkey (19) no significant relationship was found between age, work experience, rank and nurses knowledge, and attitude.

Field of specialization area was studied and had statistical significance at ($P = .000$), the highest score was from Anesthesia and critical care (CC) followed by midwifery and general nursing.

Similar Study conducted to assess the knowledge and attitude of nurses working in the emergency department found no statistical differences between the average scores and the demographic data of the participants such as age, emergency working experience and level of education (16).

From the table of an association (table.3) with selected variable, the correlation result showed the only level of education, age, years of study, cumulative GPA and placement of study has an association with percent knowledge and attitude score, but the rest did not.

This result was not congruent with the study conducted by (10, 11, 19, 23 and 26). That had cited no significant relationship was found between age, work experience, rank, and the nurses' knowledge and attitude. But the only Level of education has moderate positive associational ($r = .479$, $p = .000$). This could be described as the level of study increases, knowledge and attitude about assessment and management of pain to a final year nursing students also increases. The same result was found in research conducted in Turkey (26) nurses with the highest educational level had a significantly higher mean score than those with a lower educational level ($p = 0.001$). Besides, a study conducted in Jordan, nurses with a master degree scored higher in knowledge and attitude than those with baccalaureate degree $P = 0.001$, (23).

In this study Work experience or category did not have an association with the knowledge and attitude mean average percent ($r = .109$, $p = .134$). The same result was founded on research conducted in Turkey (26). No significant relationship was found between age, work experience, rank and nurse's knowledge, and attitude.

Another similar study that observed if the difference in knowledge and attitude exists between oncology and non-oncology nurses using the same instrument found no difference between these groups of nurses (19).

Any official training about pain management had a moderate positive association, but not statically significant with knowledge and attitude score of final year nursing students ($r = .034$, $P = .643$). but In a research conducted in Turkey (26) similarly, nurses who had training about the pain after graduation and nurses who read books and journals on pain and its management had significantly higher mean score in both cases $P = < 0.0001$. Because most of the respondents were not engaged in training in the college or the ministry. Age had also an association with a mean percent score of knowledge and attitude at ($r = .32$, $P = .000$). Hence as age increase, knowledge and attitude also increase. A similar result was found from a study done by (14, 7), a descriptive correlational design study conducted in USA (23) found significant positive correlation between age and additional training in pain management ($r = 0.32$; $P < .01$).

Commutative GPA had positive correlation ($r = 0.306^{**}$ $P = .000$). Hence students with good GPA they also had good knowledge and attitude to assessment and management of pain. In research conducted in Turkey (26), no significant relationship was found between age, work experience, rank, and nurses' knowledge and attitude. This difference showed the trend in pain issue is being changing.

Placement had weak negative correlation at ($r = -0.189^{**}$ $P = .000$). as placement in generic or regular academic status their assessment and management on pain decrease. but if they were upgrading or comes from workplace their score increased. There was no comparable result to this new finding.

This study found no statically significance on Work experience in nursing or related field of study ($r = 0.109$, $P = 0.134$). Similar study showed that Faculty who had a longer period for practice felt less prepared to manage pain properly than faculty with a shorter period to practice (23). A positive correlation was found between years of working experience and adequate preparation ($r = 0.21$) (23).

Similarly, nursing students mean score was 16.1 ± 3.0 (41.3%) with a minimum score of 7 and a maximum score of 26 (19).

Fig.3: Level of knowledge and attitude of final year nursing students

The average percent score was ($47.7\% \pm 11.5$). The lower mean percent average scores was 22 and highest was 94.4, this was out of eighty percent (80%). From 36 knowledge and attitude survey question about pain assessment and management the mean score was (17.2 ± 4), with their lowest score was 8 and the highest was 34. Deficiencies in the management of pain have been directly related to the passive participation of nurses in assessing and managing patients with pain (2).

A similar survey was conducted to assess the nursing students' knowledge and attitudes regarding pain management on children at three Jordan private universities (1). The mean score of the participants was 18.36 (SD = 6.30) from the Pediatric Nurses' Knowledge and Attitudes Survey (PNKAS) of 42 questions. Only 23.7% of the students obtained half and above, but none of the participants answered all the questions. The researcher concluded that Jordanian nursing students had poor knowledge and attitude regarding the management of pain in children (1).

On the contrary, on a similar study of nurses' knowledge and attitudes regarding pain in Northern Ireland, (15) reported a mean score of 73.8% which was more favorable than this present study.

Conclusions

This study revealed that majority of final year nursing students mean percent average score was below the satisfactory result for knowledge and attitude assessment and management of pain on final year nursing students ($n = 190$) at Asmara College of health science in 2018. The average percent score was (47.7 ± 11.5), the lowest mean percent average scores were 22% and the highest was 94.4%,

Hence there was a significant gap in the knowledge and attitude of final year nursing students regarding pain assessment and management at the time of the study.

Recommendations

The researchers recommended that nursing schools to critically review their curriculums and to determine whether students had got evidence-based and up to date information about pain assessment and management before they join the working nursing profession. Further research on using observational studies is needed to determine the actual rather than the perceived practice to knowledge and attitude of final year nursing about pain assessment and management.

Based on the finding of this research we would like to recommend the following points.

- There needed urgent train on pain assessment and management before they join the workplace
- Focused and inevitable health education regarding proper pain assessment and management care must be given to nursing students before they leave college.
- A proper review of the school syllabus and course was needed for pain assessment and management
- Strengthen education by revising the syllabus, practical labs and adequate clinical practice for all nursing students.
- Prehospital lab training on assessment and management should be available for all nursing students.
- Adequate clinical provision, training, and evaluation should be formulated on pain assessment and management.
- There was no national baseline statics shows the level of knowledge and attitude of final year nursing student on pain assessment and management, hence this would be the point of reference for further study.

References

1. Al Imari, O. (2015). Knowledge and attitudes of Jordanian nursing students toward children's pain assessment and management: A cross-sectional study. *Journal of Nursing Education and Practice*, 6(3). <https://doorg/10.5430/jnep.v6n3p51>.
2. Alm, A. K., & Norbergh, K.-G. (2013). Nurses' Opinions of Pain and the Assessed Need for Pain Medication for the Elderly. *Pain Management Nursing*, 14(2), e31–e3 <https://doi.org/10.1016/j.pmn.2010.07.007>.
3. Ayasrah, S. M., O'Neill, T., Abdalrahim, M. S., Sutary, M. M., & Kharabsheh, M. S. (2014). Pain Assessment and Management in Critically ill Intubated Patients in Jordan: A Prospective Study. *International Journal of Health Sciences*, 8(3), 287.
4. Badr, M. N., Morsy, W. Y., & Ali, N. S. (2015). Critical care Nurses' Knowledge and Practices regarding Pain assessment and management at Cairo University Hospital *Egyptian Journal of Nursing*, 10(1). Retrieved from <http://erepository.cu.edu.eg/index.php/EJN/article/view/4223>.
5. Brennan, F., Carr, D. B., & Cousins, M. (2007a). Pain management: a fundamental human right. *Anesthesia & Analgesia*, 105(1), 205–22
6. Brennan, F., Carr, D. B., & Cousins, M. (2007b). Pain management: a fundamental human right. *Anesthesia & Analgesia*, 105(1), 205–22
7. De Berardinis, B., Magrini, , Calcinaro, S., Castello, L. M., Carlo, G., Avanzi, A. S., Di Somma, S. (2013). Emergency department pain management and its impact on patients' short term outcome. *The Open Emergency Medicine Journal*, 5, 1–7.
8. D'emeh, W. M., Yacoub, I., Darawad, M. W., Al-Badawi, T. H., & Shahwan, B. (2016). Pain-Related Knowledge and Barriers among Jordanian Nurses: A National Study. *Health*, 08(06), 548–558. <https://doi.org/10.4236/health.2016.86058>.
9. Ferrell, B. R., & Mc Caffery, M. (2014). Tool for Knowledge & Attitude Survey.pdf. Retrieved from <http://prcoh.org>.
10. Gernt, E. (2013). Nurses' Attitudes towards Drug-Seekers in the Emergency Room. Retrieved from http://digitalcommons.ric.edu/school_of_nursing/43/utm_source=digitalcommons.ric.edu%2Fschool_of_nursing%2F43&utm_medium=PDF&utm_campaign
11. Hennessee, P. (2012). Knowledge and Attitudes of Nurses toward Pain Management. Retrieved from http://digitalcommons.gardner-wedu/nursing_etd/122/.
12. Keating, L., & Smith, S. (2011). Acute pain in the emergency department: The challenges. *Reviews in Pain*, 5(3), 13–17.
13. Latina, R., Mauro, L., Mitello, L., D'Angelo, D., Caputo, L., De Marinis, M. G., Baglio, G. (2015). Attitude and Knowledge of Pain Management among Italian Nurses in Hospital Setting *Pain Management Nursing*, 16(6), 959–967. <https://doi.org/10.1016/j.pmn.2015.10.002>.
14. Macrae, A. (2008). Chronic post-surgical pain: 10 years on. *British Journal of Anesthesia*, 101(1), 77–86. <https://doi.org/10.1093/bja/aen099>.
15. Matthews, E., & Malcolm, C. (2007). Nurses' Knowledge and attitudes in pain management practi *British Journal of Nursing*, 16(3), 174–179. <https://doi.org/10.12968/bjon.2007.16.3.22972> / .
16. Mocerri, T., & Drevdahl, D. J. (2014). Nurses' Knowledge and Attitudes toward Pain in the Emergency Department. *Journal of Emergency Nursing*, 40(1), 6–12. <https://doi.org/10.1016/j.jen.2012.04.014>.
17. Olateju, A. O., Adekunle, D. O., Saliu, A. O., Layiwola, A. M., Oluyimika, yebamiji E., & Adebayo, O. O. (2016). Oligoanalgesia in Emergency Department: Economical Use of Analgesia a Cause for Concer *International Journal of Recent Scientific Research*, 7(5), 11180–11184.

18. Omran, S., Al Qadire, M., Ali, N. A., & Al Hayek, M. (2014). Knowledge and attitudes about pain management: a comparison of oncology and non-oncology Jordanian nurses. *Nursing and Health, 2*(4), 73–80.
19. Ortiz, J., Wang, S., Elayda, A., & Tolpin, D. A. (2015). Preoperative patient education: can we improve satisfaction and reduce anxiety? *Brazilian Journal of Anesthesiology (English Edition), 65*(1), 7–13. <https://doi.org/10.1016/j.bjane.2013.07.009>.
20. Todd, K. H., Ducharme, J., Choiniere, M., Crandall, C., Fosnocht, D. E., Homel, P., & Tanabe, P. (2007). Pain in the Emergency Department: Results of the Pain and Emergency Medicine Initiative (PEMI) Multicenter Study. *The Journal of Pain, 8*(6), 460–466. <https://doi.org/10.1016/j.jpain.2006.12.005>.
21. Twycross, A. (2013). Nurses' Views about the Barriers and Facilitators to Effective Management of Pediatric Pain. *Pain Management Nursing, 14*(4), e164–e172. <https://doi.org/10.1016/j.pmn.2011.10.007>.
22. Vadivelu, N., Urman, R. D., & Hines, R. L. (Eds.). (2011). *Essentials of Pain Management*. New York, NY: Springer New York. <https://doi.org/10.1007/978-0-387-87579-3>.
23. Voshall, B., Dunn, K. S., & Shelestak, D. (2013). Knowledge and Attitudes of Pain Management among Nursing Faculty. *Pain Management Nursing, 14*(4), e226–e235. <https://doi.org/10.1016/j.pmn.2012.02.001>.
24. Wang, H.-L., & Tsai, Y.-F. (2010). Nurses' knowledge and barriers regarding pain management in intensive care units: ICU nurses and pain management. *Journal of Clinical Nursing, 19*(21–22), 3188–3196. <https://doi.org/10.1111/j.1365-2702.2010.03226.x>.
25. Ware MA, F. G. (2015). Review Article: Sleep, Pain and Cannabis. *Journal of Sleep Disorders & Therapy, 04* (02). <https://doi.org/10.4172/2167-0277.1000191>.
26. 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), 494–505.

Declarations

Abbreviation

ACHS =Asmara college of health Sciences **ANS**=anesthesia, **ANOVA**= analysis of variance **BSN**=bachelor science in nursing, **CC**=critical care **SD**=standard deviation **DP**=diploma, **H0**=null hypothesis, **H1**=alternative hypothesis, **HBERI**=higher board of education and research institution, **PA**=grade point average **MS**=Microsoft, **MD**=midwifery **M**=mean **SPSS**=Statistical package for Social, **IASP**=International Association for the Study of Pain **ICU**=Intensive Care unit, **NRS**=Numeric Rating Scale sciences, **PNKAS**= Pediatric Nurses' Knowledge and Attitudes Survey, point average **PANS**=postgraduate anesthesia, **PMD**=postgraduate midwifery, **VAS**=Visual Analog Scale,

Acknowledgment

Our sincere thanks go to Asmara College of health sciences, school of nursing, for giving us the opportunity and endless support for completion of this research. We particularly wish to express our deep gratitude and appreciation to Mr. Andom Yohannes, MSc and Felamawit Fessahaye, BSc for their guidance, advice and support in conducting the research at the start. We would also like to extend our thanks to our statistician Mr. Iyasu Habte, MSc in statistics for endless support. Moreover, we thank all the study participants in this research paper.

Funding

The source of funding to carry out for this research was by researchers. The institution has no role in the design of the study, collection, analysis, and interpretation of data and writing the manuscript this was the role of authors.

Availability of data and materials: The datasets used and/or analyzed during the current study available from the corresponding author on reasonable request.

Authors' contributions

We committed to the drafting of proposal, data collection, design, analysis, interpretation of the data, and manuscript preparation. We declared authors were notified and permitted to proceed to publish the work. All authors read and approved the final manuscript. We agree to hold accountable for all aspects of the work hence any questions related to the accuracy or integrity of the work should be directed to us. The authors declare that this manuscript has not been presented to any other journal for publication. All authors had read and approved the final manuscript.

Ethics approval and consent to participate

Permission was obtained from the Proposal Review and Ethical Committee of the Asmara College of Health Sciences. At last written informed consent was obtained from each respondent after a full and thorough explanation of the aim and potential outcomes of participating in the study. Also, the anonymity of the respondents was assured by not recording names of the respondents and by allowing only the researchers have access to the raw data.

Consent for publication: Not applicable.

Competing interests: The authors declare that they have no competing interests.

Additional file: tables and graphs of the present study.

Tables

Table.1: Comparison of Knowledge and Attitude percent average Score with Different Specialist/study area

Scio-Demographic Variables	Category	Knowledge and Attitude of the Respondents		
		X ± SD	t/F/value	p/value
Level of Study'	Diploma	43.7 ± 8.4	F=7.853	.000
	Bachelor	52.7 ± 12.4		
	Master	59 ± 12.5		
Gender:	Male	48.6 ± 12	t=1.2	.23
	Female	46.4 ± 10		
Any official training about pain management in the College?	Yes	47 ± 11	t=-.464	.643
	No	48 ± 11.7		
Any course took about pain assessment and management in the College?	Yes	47.7 ± 11	t=.52	.958
	No	47 ± 11.9		
Age	BSN20-21	49.7±9.2	F=7.853	.000
	DP19-24	43.1±8.9		
	DP25-51	44.6±7.5		
	MDW26-56	58.6±18.8		
	ANS23-32	66.7± 6.0		
	CANS<=25	55.6± 00		
	CANS26-37	58.3±15.3		
	PANS<=26	69.4±00		
	PANS27-53	63.9±7.8		
	PM23-26	60.6±2.3		
	PM27-51	52.8±22.0		
Years of study in Nursing=excluding freshman courses	3.00	43 ± 8.8	F=16.6	.000
	4.00	47 ± 8.7		
	5.00	59 ± 12.5		
	6.00	62 ± 10		
	7.00	59 ± 18.3		
Religion	Christian	48.4 ± 9.5	F=.074	.928
	Moslem	47.6 ± 11.9		
	others	48.8 ± 6		
Work experience in nursing or related field	Yes	64.7 ± 10.5	t=-1.507	.134
	No	35.3 ± 13		
Ethnicity	Tigrigna	47.6 ± 11.7	F=.249	.910
	Tigre	49 ± 11.9		
	Afar	41.6 ± 3.9		
	Blien	50 ± 2.7		
	Saho	50 ± 7.1		
Cumulative GPA	2.00-2.74	43.9 ± 9.3	F=5.2	.001
	2.75-3.24	47.5 ± 4.9		
	3.25-3.49	54 ± 11.2		
	3.5-3.74	54 ± 10.9		

	>=3.75	56 ± 7.9		
Placement	Generic	50 ±13	t=2.6	.009
	AP	46 ± 9		
In which field /specialization are you studying?	General nursing	45 ± 8.9	F=30.2	.000
	Midwifery	58 ± 16		
	Anesthesia &cc	61 .6 ± 11.5		
Level of knowledge and attitude regarding pain assessment and management.	Knowledge and attitude	47 ±11.5	57.2	.000

Table.2: Association of Knowledge and Attitude Score with Different Specialist/study area

	Socio-Demographic Variable	r/Value	P/Value
1.	Level of Study	.479**	.000
2.	Gender:	.093	.203
3.	Any official training about pain management in the College?	.034	.643
4.	Any course took about pain assessment and management in the College?	-.004	.958
5.	Age group	.352**	.000
6.	Years of study in Nursing	.477**	.000
7.	Religion	-.013	.861
8.	Work experience in nursing or related field	.109	.134
9.	Ethnicity	.030	.676
10.	Cumulative GPA	.306**	.000
11.	Placement	-.189**	.009
12.	In which field /specialization are you studying?	-.066	.364

Figures

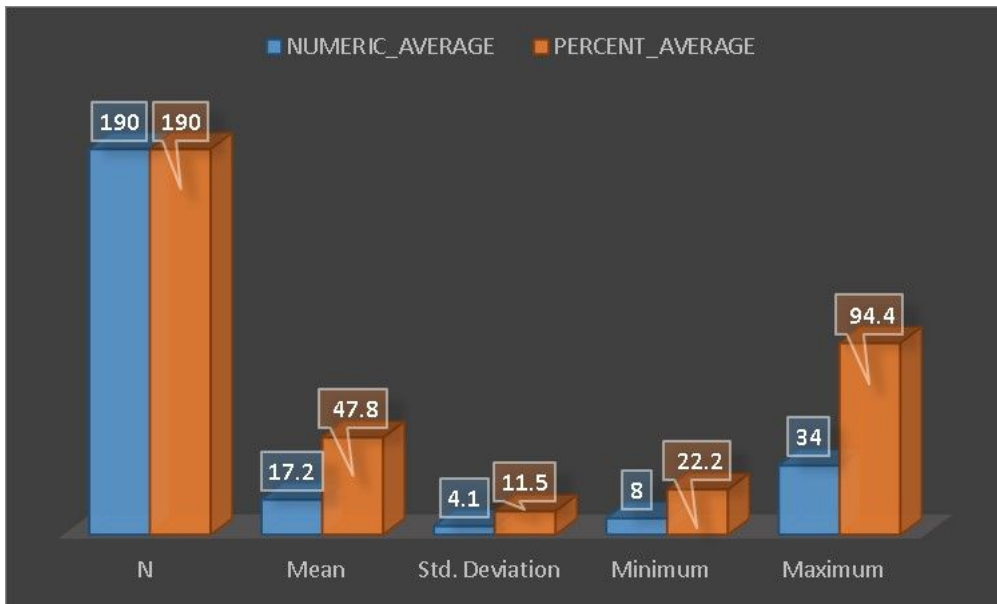


Figure 1

Distribution of numeric/percent average score of attitude and knowledge

One-Sample Test	t-value	df	p-value	95% CI	
				Lower	Upper
Percent-Average	57.2	189	.000	46	49

Figure 2

one sample t- test for hypothesis testing

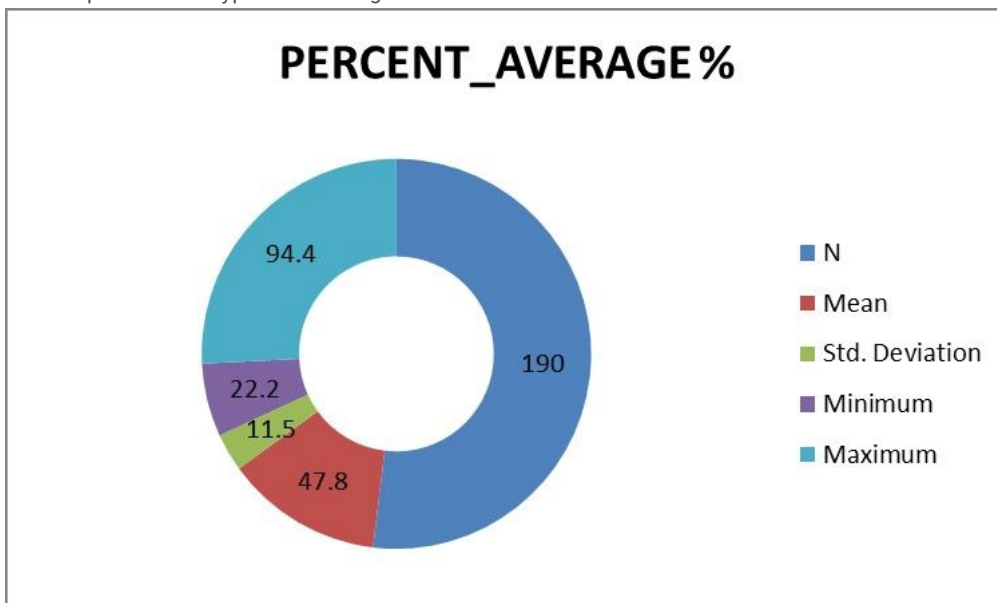


Figure 3

