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Knowledge, Attitudes, and Concerns about Labour Pain Management among Nursing Students

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Abstract:
Background: *Offering labour pain management is considered part of women's intrapartum care and is associated with positive childbirth experiences. In the pre-registration stage, labour pain management is taught within undergraduate nursing programs to prepare future nurses for practice. Therefore, it is important to explore nursing students' knowledge and attitudes as they will have the role of offering labour pain management methods in the near future. This study aimed to assess nursing students' knowledge and attitudes about labour pain management.*
Materials and Methods: *One hundred and eight students from nursing college at Imam Abdulrahman Bin Faisal University in Dammam, Saudi Arabia completed online a questionnaire intended to explore their knowledge, attitude, and concerns towards labour pain management. Data analysis was carried out using Statistical Package for the Social Sciences (SPSS) Version 24.*
Results: *Our research identified (78.7%) of participants thought that women should expect to feel pain. Moreover, the results showed that the majority (70.4%) of participants never heard of the WHO analgesic ladder. In respect of the types of methods of labour analgesia participants knew of, the results showed that 84.3% of participants thought that "breathing exercise" and (77.8%) of participants think that pharmacological methods of labour analgesia will affect the baby's breathing. Furthermore, the participants (66.7%) thought that pharmacological methods would affect labour by affecting the mother's ability to push and (84.3%) of female participants were concerned about the "Physical side effect".*
Conclusion: *Based on the result of the study that nursing students reported poor attitudes towards labour pain management, it is recommended to established preparatory training courses and workshops for students.*
Key Word*: Labor pain management; Midwifery student; health care providers; pharmacological intervention; non-pharmacological intervention.*

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I. Introduction

Throughout labour and after birth, women experience pain. Labour pain occurs because of the presence of a multitude of physiological and psychological influences during labour. A multifaceted feedback loop exists physiologically between hormones, endorphins and pain receptors that stimulate the ongoing production of oxytocin [1]. Uterine contractions and cervical dilatation are triggered by this mechanism. Labour pain experience varies according to severity, strength, duration of uterine contraction, and cervix dilation. The fetus position, descent of the presenting part, stretching of perineum, and pressure of the fetus on the bladder, intestine, and delicate pelvic structures also lead to increased pain levels [2]. Strong and constant pain associated with childbirth can affect both mother and fetus wellbeing [3].

There are several types of labour pain management methods, including pharmacological and non-pharmacological methods that can be provided to mothers during labour. Non-pharmacological approaches tend to be more focused on helping women cope with labour pain, while pharmacological interventions concentrate on pain relief [4]. Non-pharmacological methods can be classified into relaxation techniques, that include progressive muscle relaxation, breathing, music, mindfulness; and manual techniques, such as massage or application of warm packs. These methods are recommended for healthy pregnant women who request pain management during labour, depending on a woman's preferences [5]. Pharmacologic labour pain management techniques include systemic analgesia, and regional or local anesthesia. The use of newer neuraxial analgesia techniques became more widespread because they reduce the incidence of adverse effects on lower extremity motor block [6].

Efficient management of labour pain results in increased the satisfaction with birth and a safer and more positive birth experience for mother and baby. Continuous labour support can improve the childbirth outcomes; for example, it increased vaginal spontaneous birth, shorter labour period, and decreased caesarean

birth and instrumental vaginal birth [7]. The World Health Organization (WHO) considers pain relief as a quality standard of care, emphasizing that all aspects of health care should be provided in a timely, reasonable manner, and should respect the preference, culture, and needs of a woman [8]. Healthcare providers, including obstetricians, midwives, and nurses, can play a positive role by raising mothers' awareness about labour pain management and promoting their choice in dealing with labour pain; however, by neglecting such care, healthcare providers can adopt negative role [9].

The level of knowledge and attitude of nurses towards strategies for management of labour pain has a significant impact in providing these choices to women. Studies have shown that various barriers contributed to the optimal treatment of labour pain and the use of labour analgesia, including barriers related to healthcare providers. Lack of knowledge, poor attitudes, and unavailability of options for labour analgesia were the main obstacles affecting the use of labour analgesia [10-11].

The benefits of labour pain management approaches have been reported in literature. Taking a step backward in the nurses' learning journey, it is important to explore nursing students' knowledge and attitudes, because they will soon have the role of offering the menu of labour pain management methods. Also, they can actively raise mothers' awareness of using these methods. The aim of this study was to assess fourth-level nursing students and interns' knowledge, attitudes, and concerns about labour pain management methods.

Knowledge, attitude and practice of obstetricians, gynecologists and anesthesiologists pharmacological labour pain management have been examined from medical professionals' perspectives [10,12]. Interestingly, whenever the participants in studies are from the medical field, the scope of research concentrates on pharmacological methods, thereby excluding non-pharmacological methods from the focus of the studies. The reasons for the omission of non-pharmacological methods could indicate the nature of the specialty; the obstetricians adapt western medicine approach, which is deeply rooted in medicated interventions in healthcare provision. On the other hand, it is noted that when research involves nursing and midwifery specialties, the concept of labour pain management is broadly considered to include both pharmacological and non-pharmacological methods [3].

Levels of knowledge about labour pain management among healthcare providers in research are varied. In Ethiopia, more than half of the participants, including midwifes, nurses, and health officers at a public health center (N=309), had sufficient knowledge of labour pain management strategies [13], while 42.40% of the participants' reported knowledge about non-pharmacological labour pain management methods in Kenya [14]. It was found that most healthcare professionals in Tanzania were aware of several pain control methods, including both pharmacological and non-pharmacological choices [15]. However, half of healthcare providers regarded labour pain as 'normal' and appropriate for birth and thus did not offer pharmacological pain relief on a regular basis [15]. In India, it is reported that 90% of participating obstetricians (N=100) considered epidural analgesia to be the most efficient, while only 55% of them had the real experience of epidural analgesia during childbirth [10]. In contrast to the previously mentioned studies, a study revealed that relatively half of participating nurses in Zimbabwe (51.4%) showed a lack of knowledge about non-pharmacological labour pain management [16].

A cross sectional study shows that labour pain management was regularly performed by 13.8% of the healthcare providers [17]. Among these participants, physicians were less likely to manage labour pain, while the participants with baccalaureate or greater degrees were more likely to utilize labour pain management methods. However, more than half of the healthcare providers in Kenya reported that they performed massaging, breathing exercises, and facilitated numerous childbirth positions during labour [14].

Ponnusamy et al. [18] examined awareness, knowledge, and attitude about labour analgesia among pregnant women (N=389), obstetricians (N=124), and anesthesiologist (N=112), and identified the barriers to utilization of labour analgesia; in medical colleges and private hospitals in Pondicherry, India. The authors concluded that 60% of providers were aware of labour analgesia, but only 10% of their practice included labour pain management. Epidural analgesia was the first choice for anesthesiologists, while obstetricians preferred parenteral medications, mostly choosing tramadol. Both obstetricians and anesthesiologists were worried about increased instrumental vaginal delivery where more time to be allocated and complications associated with the procedure. Furthermore, studies in Brazil and Karachi indicate a large gap between labour analgesia knowledge and practice [12,19]. From another perspective, Sahile et al. [20] studied the practice of labour pain management methods among skilled attendants and showed that 43.3% of labour pain control methodes were practiced, and they were only non-pharmacological approaches. The results of the study revealed that there is a correlation between positive attitudes and higher qualifications to practice labour pain management methods. The authors recommended that there is a need to raise knowledge and positive attitude of skilled attendants related to labour pain management methods.

In addition, attitude of healthcare providers towards labour pain management has been examined in literature. In Kenya, it was reported that healthcare providers (N=286), including staff nurses, student nurses, residents, medical officers, and clinical officers had positive attitudes toward labour pain management methods

[14]. The participants showed positive attitudes to epidural and non-opioid analgesics and negative attitudes regarding the other approaches [12].

Within the student context, two studies investigated midwifery students in Turkey. Findings from one study showed that 43.3% of the participating midwifery students (N=60) had knowledge about non-pharmacological pain management methods [21] and at least one of these methods were applied to pregnant women who they cared for. Another study done att the Yuzuncu Yil University School of Health states that more than 58.5% of the students reported that labour pain was an intervenable condition and 58.1% of them want to use pain management methods to deal with labour pain [22]. The most frequently heard of and been observed pharmacological procedure among students was local anesthesia (75.6%); of the non-pharmacological method, breathing exercise (76.5%) was the most known. Less than half of students (43.2%) had no idea about traditional practices.

In low-income countries such as Ethiopia, Endalew et al. [23] examined 131 final year midwifery students' knowledge and attitudes towards pain management in labour. The participants perceived the labour event as a painful one. In addition,most of the participants (70%) were not aware of labour pain management methods. The major obstacles for not using labour pain managment methoeds were the lack of resources, lack of knowledge, and mother's unpreparedness [14]. Challenges were highlighted in Tanzanya [15] which included staff shortages, lack of supplies, limited access to nitrous oxide or epidural medication, and concerns about the effect of opiates on women and/or babies.

Despite being involved in maternity care during labour, little is known about the knowledge and attitudes about labour pain management amongst nursing students who studied obstetrics, particularly in Saudi Arabia. Therefore, this study will examine this area to bridge the gap in literature.

II. Material And Methods

Design and Methods

This is a quantitative, descriptive, cross-sectional study. The study conducted at the College of Nursing - Imam Abdulrahman Bin Faisal University in Dammam City, Saudi Arabia. A convenience sample of nursing students who finished the obstetrics and gynecologic nursing course and internship year (fifth year) in the academic year 2020-2021 were recruited. The total population of nursing students was 257 males and females, 137 at fourth year and 120 are in the internship year. Total sample size were108 males and 63 females from fourth year and 45 interns nursing students who agreed to participate in this study.

The questionnaire was distributed online due to the current conditions of the COVID-19 pandemic. A pilot study was conducted after obtaining approval from the Standing Committee of Research Ethics on Living Creatures (SCERLC) and Nursing college of the Imam Abdulrahman Bin Faisal University. The researcher randomly selected a pilot of 20 participants (nursing students) who met the inclusion criteria for purpose of conducting validity and reliability tests, 19 of whom responded and completed the survey. The main data collection for this research was carried out after the pilot study's data collection. Data were collected over a three-week period. The survey started with an invitation to participate in the study with an information sheet that included a description of the study in terms of the aims, tools, procedures, expected benefits, potential risks, and contact details of the researchers. The survey was anonymous to protect the participants' confidentiality.

Study Tools

To achieve the research objectives, the researcher adapted a questionnaire from a study of healthcare providers' knowledge and attitudes [23] regarding pain relief in labour for women in Ethiopia, which basically was adapted from a previous study conducted by McCauley et al. [15]. Permission to use the tool was granted. The questionnaire takes approximately five to ten minutes to be filled and contains two sections. First section contained demographic data which was developed by the researcher. Five demographic characteristics were required, which are age, gender, level of education, study program type, and previous years academic performance (GPA). Second section it includes fifteen questions for assessing nursing students' knowledge, attitudes, and concerns about labour pain management. The first twelve questions measuring the students' knowledge and attitudes towards labour analgesia. The last three items required participants opinion regarding their concerns for use of labour analgesia. For the questions from nine to fifteen, participants were instructed to pick more than one answer, if applicable, and were also asked to provide free text at the option 'other (specify)'.

Ethical Consideration

Ethical approval was obtained from the SCERLC in the Imam Abdulrahman Bin Faisal University (IAU) in Dammam, Saudi Arabia. Also, approval for gaining access to the nursing students in the College of Nursing was taken from the Dean of the nursing college. After obtaining the approval from SCERLC and nursing college, the researcher sent a request letter to the Supervisor of the Agency for Clinical Affairs and Training to send the survey to the participants. Consent from the participants was granted once they agreed and

completed the questionnaire. Ethical codes of research conduct were strictly followed. Research data were kept securely, and no identifying data was used.

Data Analysis

The data were coded and analyzed using the Statistical Package for The Social Science (SPSS: Version 24). Descriptive statistics (frequencies, parentages, means, and standard deviations), and inferential statistics (multiple regression analysis) were used to conduct the individual instruments for the sub-scales scores and describe the demographic data.

III. Result

The sample of the study was 108 male and female nursing students in the 4th year and internship year. All participants (100.0%) are regular students. The majority (66.7%) of the participants were female, while 33.3% were male. Regarding Age, 67.6% of participants were aged 22 or less, while 32.4% were aged 23 and above. In respect of their level of education, 58.3% of participants were in the fourth year, while 41.7% were in the internship year [Table 1]. Table (2) shows the results of descriptive analysis for scale variables (age and GPA). It is found that the sample age was in the range of 21 to 25 years with mean age of 22.2 years and SD (0.82). The GPA was range between 3.0 to 4.91 with mean of 4.22 and SD (0.40).

Table 1 Frequency distribution of participants according to demographic characteristics

Variables	Frequency	Percentage
Sex		
Male	36	33.3%
Female	72	66.7%
Age		
22 or less	73	67.6%
23 and above	35	32.4%
Study program type		
Regular	108	100.0%
Level of education		
4th year	63	58.3%
Internship year	45	41.7%
Total	108	100.0%

Table 2 mean and standard deviation for age and GPA

Statistics	Age	Previous years academic performance (GPA)
Mean	22.2	4.22
Std. Deviation	0.82	0.40
Minimum	21	3.0
Maximum	25	4.91

Table 3 Means, standard deviations, and chi-square test results for the responses toward the items (Q1-Q7) in the first and second dimensions "Knowledge and attitude towards labor analgesia"

Statements	Mean	S.D	Chi-Square	P-value	Level	Rank
Q1. Should women expect to feel pain	2.72	0.58	101.2**	0.000	Yes	1
Q2. Have you had any previous education on labor analgesia	2.25	0.87	19.5**	0.000	Not sure	3
Q3. Do you think pain in labor should be relieved	2.22	0.90	24.7**	0.000	Not sure	4
Q4. Have you been asked to provide pain relieve under supervision	1.54	0.85	67.4**	0.000	No	6
Q5. Would you provide pain relief if you had the resource after you graduate	2.63	0.64	72.4**	0.000	Yes	2
Q6. Have you heard of the WHO analgesic ladder	1.47	0.78	67.2**	0.000	No	7
Q7. Do you have concerns with using pain relief in labor	2.03	0.86	22.2**	0.000	Not sure	5
General Total	2.12	0.78			Not sure	

(**) test is significant at level (0.01).

Table (3) shows the means, standard deviations and the results of chi-square test for goodness of fitness for the responses toward the statements (Q1 – Q7) in the first dimension. In general, it is found that all chi-square values are statistically significant with (p-values < 0.05), i.e. there are statistically significant differences between the expected and observed frequencies, and in other words, there are significant differences between the participants in their opinion toward these statements in the first dimension.

The general mean of the dimension is (2.12) which lays within the second interval (1.67 –< 2.34) of Likert Three-Level Scale. This indicates that the general opinion of participants tends to the level of response (not sure) which corresponds the level (medium). Therefore, the nursing students have medium knowledge about labor pain management.

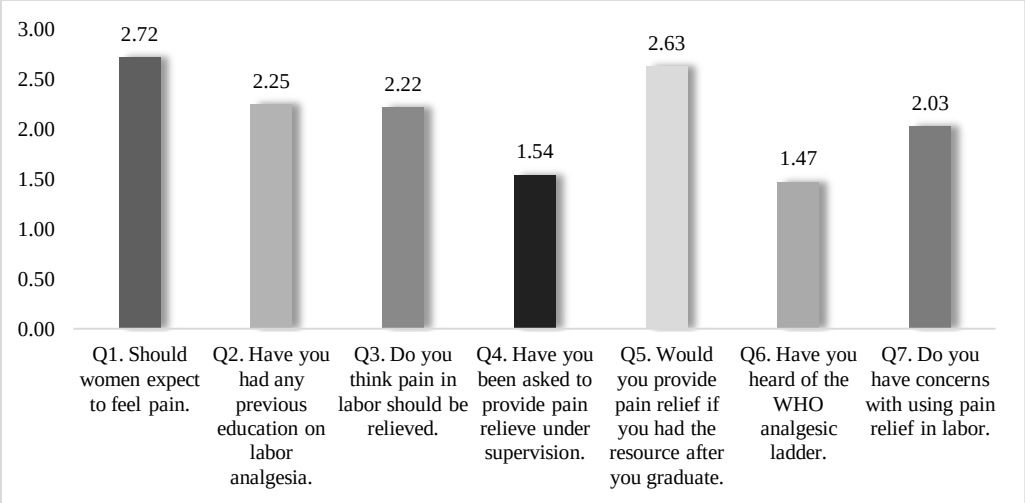

Figure 1 Comparison between items (Q1 – Q7) in the first dimension according to mean.

Table [4] showed that 85 (78.7%) of participants thought that women should expect to feel pain.
Also, the results demonstrate that the majority 75 (69.4%) of participants had not been asked to provide pain relief under supervision. Moreover, more than half (71.3%) of participants would provide pain relief if they had the resource after they graduate.
Moreover, the results showed that the majority (70.4%) of participants never heard of the WHO analgesic ladder. The results showed that 41(38%) of participants have concerns with using pain relief in labour. Furthermore, 58.3% of participants expect women to experience "severe" pain.

Table 4 Frequency distribution of study sample according to their Knowledge and attitude towards labour analgesia

Items	**Frequency**	**Percentage**
Q1. Should women expect to feel pain?		
Yes	85	78.7%
No	7	6.5%
Not sure	16	14.8%
Q2. Have you had any previous education on labour analgesia?		
Yes	57	52.8%
No	30	27.8%
Not sure	21	19.4%
Q3. Do you think pain in labour should be relieved?		
Yes	58	53.7%
No	34	31.5%
Not sure	16	14.8%
Q4. Have you been asked to provide pain relieve under supervision?		
Yes	25	23.1%
No	75	69.4%

Not sure	8	7.4%
Q5. Would you provide pain relief if you had the resource after you graduate?		
Yes	77	71.3%
No	9	8.3%
Not sure	22	20.4%
Q6. Have you heard of the WHO analgesic ladder?		
Yes	19	17.6%
No	76	70.4%
Not sure	13	12.0%
Q7. Do you have concerns with using pain relief in labour?		
Yes	41	38.0%
No	38	35.2%
Not sure	29	26.9%
Q8. What intensity of pain would you expect them to experience?		
No pain	1	0.9%
Mild	18	16.7%
Moderate	26	24.1%
Severe	63	58.3%
Q9. What types of methods of labour analgesia do you know?		
None	2	1.9%
Emotional support	71	65.7%
Breathing exercise	91	84.3%
Massage	75	69.4%
TENS	4	3.7%
Acupuncture	33	30.6%
No-opioids	35	32.4%
Opioids	55	50.9%
Inhalational agents	37	34.3%
50:50 mix of O2/N2O	11	10.2%
Regional analgesia	67	62.0%
Other specify (water bath immersion, Epidural, Fentanyl)	5	4.6%
Q10. Why do you think pain should be relieved?		
To relieve pain	86	79.6%
To relieve stress	74	68.5%
To feel confident	14	13.0%
To enjoy the experience	22	20.4%
Other specify (to focus on the delivery process, to stay comfortable, to prevent complications)	4	3.7%
Q11. Why do you think labour pain should not be relieved?		
Labour is a natural process	48	44.4%
It will take labour longer	41	38.0%
It will affect the baby	41	38.0%
Will cause complication	44	40.7%
Other specify (side effect of analgesic drugs, it should be relieved, cause complication, none)	12	11.1%
Q12. What are the main barriers for parturient to receive analgesia in labour?		
Lack of awareness of parturient	64	59.3%

Lack of awareness of medical professional	39	36.1%
Cultural norm	39	36.1%
Financial constraints	31	28.7%
Lack of availability	26	24.1%
Did not included as part of teaching curriculum	30	27.8%
Other specify (some false information like it cause paralysis, it will cause back Pain)	5	4.6%

In respect of the types of methods of labour analgesia participants knew of, the results showed that 84.3% of participants thought that "breathing exercise" is a method of labour analgesia, 69.4% knew of "massage", 65.7% knew of "emotional support", 62.0% know "regional analgesia", while 10.2% knew of the "50:50 mix of O2/N2O" as method of labour analgesia. Just 3.7% knew of "TENS", and only 1.9% believed that none of these were methods of labour analgesia [Figure 2].

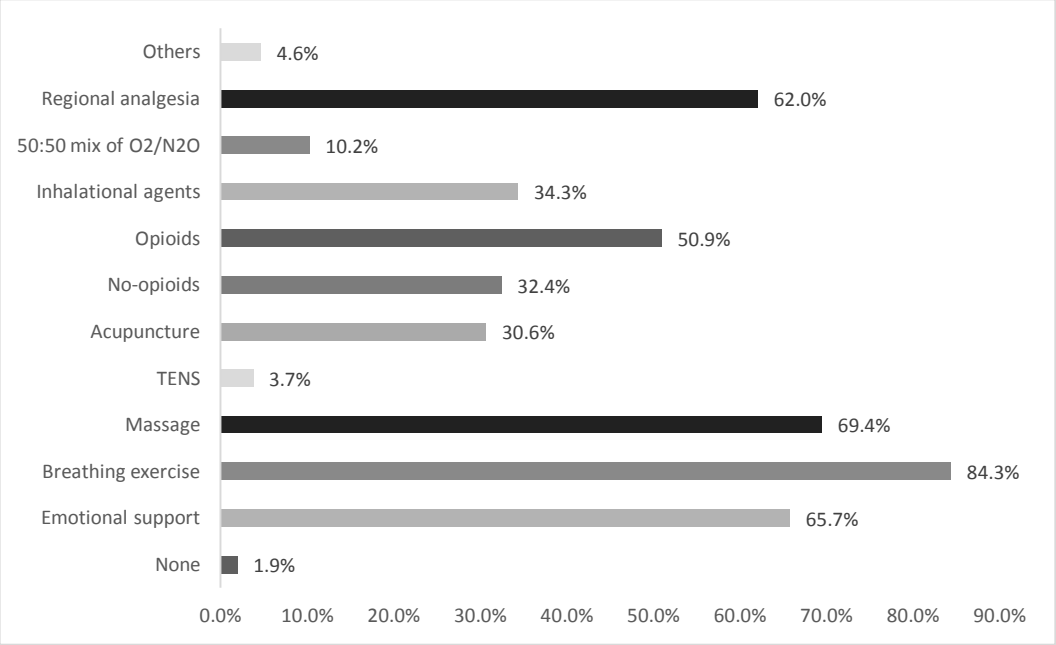

Figure 2 types of methods of labour analgesia the students know

In addition, regarding "Why do you think pain should be relieved?", 79.6% of participants though that it was "to relieve pain", and 68.5% thought that it should be "to relieve stress"[Table 4].

On the question "Why do you think labour pain should not be relieved", it was found that 44.4% of participants thought labour pain should not be relieved because "labour is natural process", 40.7% thought "it will cause complication" [Table 4].

In respect of what participants considered the main barriers for the parturient to receive analgesia in labour, 59.3% of participants believed that there was a "lack of awareness of parturient" [Figure 3].

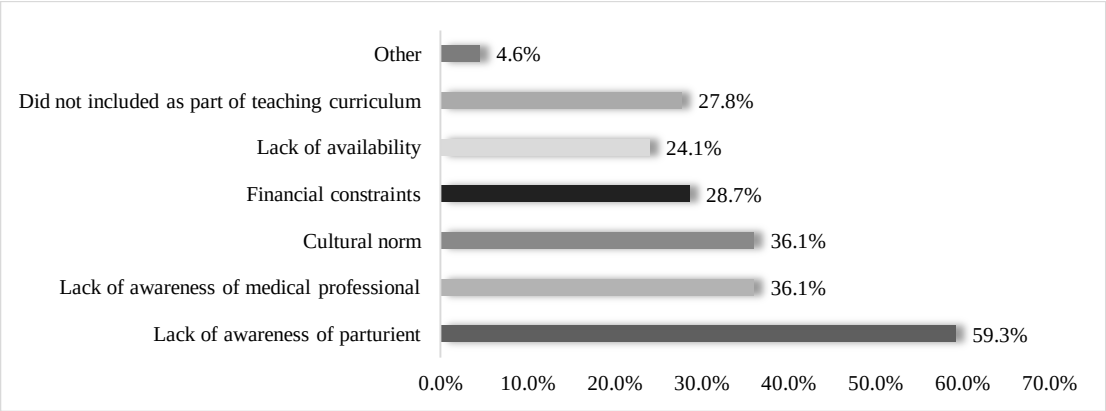

Figure 3 The main barriers for parturient to receive analgesia in labour.

Table 5 shows the results of concerns towards pharmacologic methods of labour analgesia. It shows that on the question of "How will pharmacologic methods of labour analgesia affect the baby", 77.8% of participants think that pharmacological methods of labour analgesia will affect the baby's breathing.

Table 5 Frequency distribution of study sample according to their Concerns towards pharmacologic methods of labour analgesia

Items	Frequency	Percentage
Q13. How will pharmacologic methods of labour analgesia affect the baby?		
It will affect the baby's breathing	84	77.8%
It will affect bonding	19	17.6%
It will affect breastfeeding	20	18.5%
It may affect baby's development	21	19.4%
Other specify (it will not effect the baby, drop in the baby heart rate, hypotension, none)	8	7.4%
Q14. How will pharmacologic methods of labour analgesia affect the labour?		
It will affect contraction	61	56.5%
Make the labour unnatural	13	12.0%
Affect the mother's ability to push	72	66.7%
Increase operative delivery and cesarean section	37	34.3%
Other specify (none, decrease the pain)	4	3.7%
Q15. How will pharmacologic methods affect the mother?		
Physical side effect	91	84.3%
It may cause sleep	45	41.7%
It may cause addiction	13	12.0%
Other specify (I don't believe it cause harm to the mother, long time of postpartum pain, not sure)	5	4.6%

Moreover, in regard to "How will pharmacological methods of labour analgesia affect the labour", it is found that 66.7% of participants thought that pharmacological methods would affect labour by affecting the mother's ability to push, 56.5% believed it would affect contraction [Figure 4].

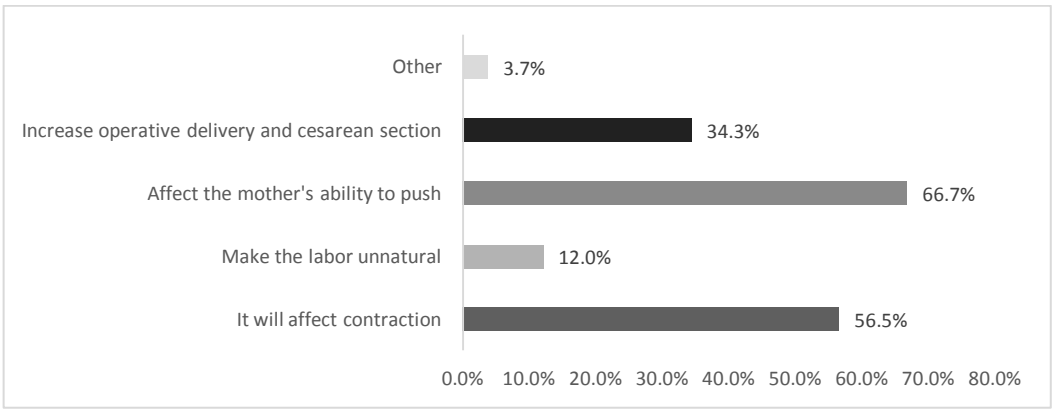

Figure 4 How will pharmacologic methods of labour analgesia affect the labour?

When asked "How will pharmacologic methods affect the mother", 84.3% of participants were concerned about the "Physical side effect" [Figure 5].

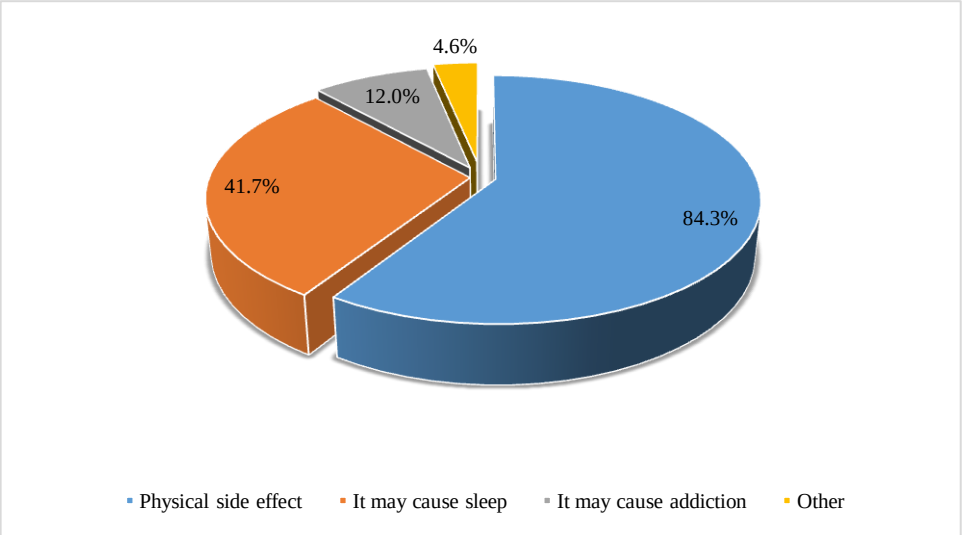

Figure 5 How will pharmacologic methods affect the mother?

IV. Discussion

The study reveals that there is a perception that labour is a natural process that women should be capable of coping with. Little was found in the previous studies regarding knowledge and attitudes about labour pain management methods among nursing and midwifery students and there were few studies conducted among healthcare professionals.

In this study, most participants were aware that women can experience moderate to severe pain during labour, and that pain should be alleviated. This is consistent with results from an Ethiopian study amongst 131 final year midwifery students where the labour event was perceived mainly as a painful one, with 30% and 57% of students respectively expected women to experience moderate and high intensity labour pain, while 62% recognized that labour pain should be relieved [2**3**]. Another study by Mousa et al. [24]78.2% of participants believed in pain relief and nearly 44.9% used non-pharmacological methods in the first stage of labour, while 36.8% used neither pharmacological nor non-pharmacological methods. Similarly, a study in Turkey revealed more than 58.5% of the students reported that labour pain was an intervenable condition and 58.1% of them wanted to use pain management methods to deal with labour pain [2**2**].

However, in this study fewer participants reported that labour pain should be relieved than in previous studies. The explanation is likely that students do not have sufficient experience and have not been exposed to clinical working areas, whereas in the other studies most participants were healthcare providers.

According to WHO, parturient during labour can be given a variety of labour pain relief options, including pharmacological and non-pharmacological methods. Non-pharmacological approaches involve relaxation techniques, which include relaxation, breathing, music, and mindfulness; and manual techniques, such as massage, application of warm packs, acupuncture, or Transcutaneous Electrical Nerve Stimulation (TENS). Pharmacological methods of pain relief involve the use of several analgesics and anesthesia administered intravenously, intramuscularly, or through inhalation. The strategies vary with respect to the choice of analgesic and the manner of administration. Systemic opiates, such as Pethidine, Morphine and Fentanyl, as well as non-opiates, such as ketamine, are commonly used analgesics. These methods are recommended for healthy pregnant women who request pain management during labour, depending on a woman's preferences [5]. The current study found that student knowledge of the WHO analgesic leader was low. This finding was also reported by Endalew et al. [2**3**].

Regarding the non-pharmacological labour pain management methods, the students had higher knowledge than other methods for breathing exercises (84.3%). These results are similar with those obtained by Mwanza et al. [1**6**] in Bindura Hospital, Zimbabwe, in which the total use of breathing exercise for labour pain management was 90.7%. This proportion showed the most use of non-pharmacological labour pain management methods. The other studies showed there is a gap in utilization of non-pharmacological labour pain management and highlight the contributing factors, including age, attitude, level of education, knowledge, and the availability of labour pain management protocols [1**1**,24]. These findings suggest a possible cause in this study might be related to the lack of availability of the labour pain management methods and a gap in nursing students' training.

Another important finding was that the level of knowledge of available pharmacological methods of

labour analgesia among nursing students was moderate. In this study, the highest and lowest known methods of pharmacological methods was regional analgesia and 50:50 mix of O2/ N2O, respectively, where 62% chose regional analgesia, while only 10.2% of the students chose 50:50 mix of O2/ N2O. This is partially in agreement with previous studies in which epidural analgesia and opioid analgesic methods were predominant in their practice for pharmacological labour pain management [10,1**2**,1**8**]. There are two likely causes for the differences in between this survey and the others. First, it can be explained that more than a quarter of the students (27.8%) reported they were not taught labour analgesia during their education program, and less than a quarter stated they were not sure if had studied it (19.4%). A second possible cause is that most of the nursing students did not offer labour pain management under supervision (69.4%).

One unanticipated finding was that only around half of the participants have positive attitudes towards labour pain management methods. There are similarities between the attitudes expressed in this study and that described by Geltore et al. [**25**] and Endalew et al. [2**3**] but is in contrast to Bhuvaneshwari and Chellammal [10]. Regarding the most significant obstacles to a parturient receiving analgesia during labour in this study, more than half of the nursing students stated that lack of awareness of parturient, inadequate knowledge of health care professionals; cultural norm and cost were the main reasons.

On the question of student concerns about pharmacological methods of labour analgesia, this study found negative attitudes to pharmacological analgesia. The majority of respondents indicated that pharmacological analgesia would have an effect on the baby's breathing, has an impact on the birth process by affecting on contractions and the mother's ability to push, as well as having physical side effects on the mother. Previous research has revealed that these concerns are shared by health care professionals as well. Ponnusamy et al. [18] study in India found that obstetricians and anesthesiologists were worried about increased instrumental incidence and complications associated with a procedure. Another study by Hussain & Maheswari [26] examined participants' attitudes regarding labour analgesia and found that participants' fear about their prolonged labour and increase the incidence of instrumental deliveries. In a Karachi study, 14.1% thought analgesia had adverse effects on the fetus, while 11.3% stated increased cesarean section risk [19]. However, in Brazil, 94% of obstetricians stated no concern about epidural analgesia and that it should be available [12].

Based on the previous studies, it was recommended increasing students' knowledge about non-pharmacological labour pain management methods [21-23] and improving their theoretical education by using visual learning approaches and simulation practice methods [21]. It was also recommended that midwifery students should be equipped with comprehensive information about labour pain management. Similarly, pre-service education and training for midwifery students was recommended, particularly in teaching hospitals [23]. Also recommended was to offer education which optimizes available methods, both pharmacological and non-pharmacological, to enhance evidence-based pain management [15]. The authors suggested that nurses should be engaged in continuous education to increase the level of awareness and improve their attitude toward pain management. Moreover, the authors suggested that the nursing education curriculum should focus more on non-pharmacological pain management [16].

V. Conclusion

The aim of the current research was to explore nursing students' knowledge, attitudes, and concerns about labour pain management methods. Based on the responses of the participants, it is possible to conclude that nursing students' knowledge is fair, and they recognize and accept that labour pain could be intolerable foe women and should be managed. Regarding the nursing students' attitudes, it was revealed to be negative toward labour pain management. In respect of poor attitudes of the nursing students towards labour pain management methods, there is a need to increase awareness of the nursing students. As a result, it is recommended that preparatory training courses and workshops should be established in the hospital for students before they start working in clinical areas.

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Conflict of Interest:

The authors have no conflict of interest to declare.

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